NEW REMEDIES

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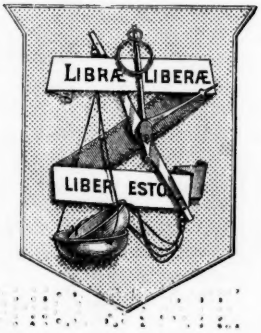

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NEW REMEDIES.

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Quillaia Saponaria and its Uses.

THE tree which yields the well-known commercial Soap-Bark, or Panama-Bark, is a native of Chili and Peru. *Quillaia Saponaria* Mol. (or *Qu. Molinæ* DC.) nat. fam. Rosaceæ, is an evergreen tree attaining a height of 45 to 60 feet, with oval leaves, having a short petiole, and white terminal dicœcious or hermaphrodite flowers. In the latter (see Fig. 2), the concavity of the receptacle is coated with a glandular disk, consisting of 5 lobes which are attached to the base of the inner side of the sepals. The petals arise from the angles formed between these segments. Just below the outer point of the lobes, 5 stamens arise, and 5 others are attached inside and a little below the sepals. All these stamens consist of free filaments tapering above, and bearing a bilocular introrse and versatile anther. In the centre of the flower the receptacle rises to a small cone, upon the convex surface of which 5 carpels are inserted, each consisting of a unilocular ovary, surmounted by an attenuated style, ending in a scarcely distinguishable stigma.

FIG. 1.—*Quillaia Saponaria* Mol.

Soap-bark.—The inner bark, or liber of this tree has been in use for a long time past by the inhabitants of Chili and neighboring countries for washing purposes, in place of soap. On bruising the bark and macerating it with water, the liquid acquires the property of frothing, like soap-suds, when agitated. Such a solution is capable of removing grease, and is particularly applicable for washing silken and woolen stuffs of a delicate color, which would be injured by coming in contact with soap. Linen, however, is said to be injured by it, being turned yellow. The bark is known to the inhabitants as *quillai*, which is said to be derived from the Chilian word quillean "to wash."

Saponin.—The constituent upon which its peculiar properties depend, is a neutral principle (glucoside), termed *saponin*, which is nearly inodorous, has a sweetish, afterwards acrid taste, and violently irritates the nostrils. It exists also in other plants, namely in the root of *Saponaria officinalis* L. (Soapwort; nat. fam. Caryophyllaceæ); in the root of *Gypsophila Struthium* L., and of several species of *Dianthus*, *Lychnis*, and *Silene* (all of the nat. fam. Caryophyllaceæ); in the root of *Monnina polystachia* R. et Pav.; in Monesia-bark from *Chrysophyllum glycyphlœum* Cas.; and is probably identical with the "polygalic acid" or "senegin" contained in *Polygala Senega* L.

Uses of Quillaia Bark.—As stated before, the principal use of the bark is for washing tinted goods of silk or wool. An extract, called "Panamin," has been also put on the market in England for this purpose. It forms an excellent constituent of tooth-pastes and tooth-powders. One of its most useful applications in pharmacy, however, is that of serving as an emulsifying agent. We can do no better than to give an abstract of a paper read by Mr. Henry Collier at the last meeting of the British Pharm. Conference.*

Tincture of Quillaia as an emulsifying agent.—The tincture which served as a basis of the experiments detailed and illustrated by Mr. Collier

* From *Pharm. Journ. and Trans.*, Sept. 20th.

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was made according to the formula of the Guy's Hospital Pharmacopœia:

Quillaia bark, in coarse powder	4 oz.
Alcohol	1 pint.

Digest for three days, and strain. The bark, before powdering, is carefully freed from all remains of the outside layer, and the tincture produced is of a pale-yellow color.

If tincture of quillaia is shaken with metallic mercury, the latter is reduced to a very fine state of division, having very much the appearance of hydrargyrum cum creta. So long as there is some tincture present, this division of the metal remains; on drying, it at once runs together, and appears in its ordinary liquid state. This remarkable power which tincture of quillaia possesses, of disintegrating and keeping asunder the globules of mercury, makes it so valued as an emulsifying agent.

A true emulsion consists of a number of oily or resinous particles floating about in a watery liquid by means of some agent which prevents them from cohering. To be perfect, the emulsion should have a milky appearance and the suspended particles should not subside or rise too rapidly.

FIG. 2.—Section of the Flower.

In the Brit. Pharm., there is a preparation containing mercury in a very fine state of division, and which is, in fact, an emulsion containing mercury finely divided. This is the "*Linimentum Hydrargyri*," ordered to be made from: Unguentum Hydrargyri, 1 oz.; Linimentum Camphoræ, Aqua Ammoniæ, each 1 oz. It should be a lead-colored cream, but, as Mr. Squire says, it is "curds and whey." By using tincture of quillaia, a good emulsion may be made; and although the Ung. Hydrarg. will gradually settle to the bottom on standing, by a vigorous shaking it will again blend perfectly. The following is the formula:*

Liniment of camphor	ʒ i
Tincture of quillaia	ʒ 3
Stronger solution of ammonia 160 ♏, mixed with water to make	ʒ 5
Mercurial ointment	oz. 1

Chloroform is made into an excellent emulsion thus:

Chloroform	♏ 10
Tincture of Quillaia	ʒ 1
Distilled water, suff. to make	ʒ 1

Although chloroform is such a heavy liquid, yet it remains suspended for some minutes after shaking. It finally settles as a creamy layer at the bottom of the bottle. A solution of saponin in water shaken with chloroform converts it into a thick creamy fluid; the water separates, but the chloroform permanently retains its creamy character.

Emulsion of Castor Oil:

Castor oil	ʒ ½
Tincture of quillaia	ʒ ½
Distilled water, suff. to make	ʒ 1

The tincture is first put into the bottle, then the oil, and shaken together, then the water is added, and the whole again shaken. The emulsion thus formed resembles its prototype "milk" in appearance, and, like it, separates after the lapse of some time into a cream at the top, which mixes again upon agitation. Emulsions of *Cod-Liver Oil* and *Olive Oil*, prepared in a similar manner, are of just as perfect a character.

Emulsion of Male Fern:

Fluid extract of male fern	ʒ 1
Tincture of quillaia	ʒ ½
Distilled water, suff. to make	oz. 1

This forms an excellent emulsion, and with the addition of Syrup of Ginger ʒ ½ constitutes the "Mistura Filicis Maris" of Guy's Hospital.

Emulsion of Copaiva:

Copaiva	ʒ ½
Tincture of quillaia	ʒ ½
Distilled water, suff. to make	oz. 1

The copaiva is perfectly emulsified.

Emulsion of Essential Oils:

Oil of turpentine	♏ 20
Tincture of quillaia	♏ 20
Distilled water, suff. to make	ʒ 1

This formula, with the addition of Tinctura Limonis, is the Mistura Terebinthinæ of Guy's Hospital.

Emulsions of Resins:

Resinous tinctures require more than their bulk of tinct. of quillaia to prevent separation of resin:

Tincture of tolu	♏ 40
" " quillaia	ʒ 1
Distilled water, suff. to make	ʒ 1

The resin deposits after some time; but on shaking, it is easily diffused.

Resin of guaiac	gr. 12
Tincture of quillaia	ʒ 1
Distilled water, suff. to make	ʒ 1

Dissolve the resin in the tincture, filter, and mix with the water. This mixture is of about the same strength as the Mist. Guaiaci Br. Pharm.

Resin of copaiva	gr. 15
Alcohol	♏ 20
Compound powder of tragacanth*	gr. 15
Syrup of ginger	ʒ 1
Distilled water, suff. to make	ʒ 1

*In the Brit. Pharm., liquids are meant to be taken by imperial measure, and solids by avoirdupois weight.

*Pulvis Tragacanthæ Co., Brit. Pharm., consists of Powdered Tragacanth, Acacia, and Starch, each 1 part; Powdered Sugar, 3 parts.

The resin and alcohol are put into an evaporating dish, and blended together by heating over a water-bath, then poured into a mortar, containing the Pulv. Tragacanth. Co., previously made into a thick mucilage with a little of the water, and well rubbed together, the syrup and the remainder of the water being gradually added.

This is the Mistura Resinæ Copaibæ of Guy's Hospital, where it is largely used as a diuretic. Resin of copaiva appears to make a better mixture with the compound powder of tragacanth, than when made with tincture of quillaia.

Resin of copaiva	gr. 15
Tincture of quillaia	ʒ i
Distilled water, suff. to make	ʒ i

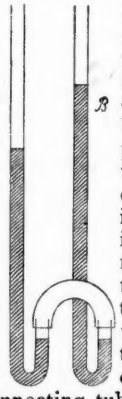
Dissolve the resin in the tincture, and add the water gradually, with agitation.

Balsam of Peru	♏15
Tincture of quillaia	ʒ i
Distilled water, suff. to make	ʒ i

This mixture is open to the same objection, the balsam subsiding too rapidly. The above quantity of balsam, with gr. 15 of Pulv. Tragac. Co., gives an excellent result.

Apparatus for Determining the Specific Gravity of Liquids.

Dr. Leonhard Weber recommends the following apparatus and process: Bend two glass-tubes of as nearly as possible the same calibre,



in the manner shown in the cut, and connect the lower ends by means of a rubber-tube. Then fasten both tubes close to each other in a perpendicular position by means of a retort-stand. Now pour a small quantity of each of the liquids to be compared with each other into the open ends, for instance, water into *A* and alcohol into *B*, until the lower bend is filled, then gradually add, alternately to *A* and to *B*, more of the respective liquids. The columns of liquid in each tube will thereby rise more or less, but the compressed air retained in the connecting tube below will permit only a very slight rise of the liquids in the short limbs. The difference of level of the liquids in *A* and *B* are inversely proportional to the specific gravities of the liquids. If, therefore, the spec. gr. of one liquid is known, that of the other may readily be determined by measuring.—*Carl's Repert. d. Exp. Phys.*, 1879, 51.

Australian Duty on Drugs.—The effort of the Victorian Government to impose a 20% duty on drugs and chemicals and their preparations has been defeated by the efforts of the Pharmaceutical Society of Victoria.

[Original Communication.]

ON THE PREPARATION OF DILUTE ALCOHOL.

BY W. C. TIDBALL.

In New Remedies for October appeared an article by Prof. Wenzell, on the preparation of dilute alcohol from alcohol of any strength. Having had occasion to make large quantities of dilute alcohol, I have used a rule which, I think, is as simple and easy as it can possibly be made. It depends on this fact, that when we dilute an alcohol, we do not change the *amount* of *absolute* alcohol, but we merely decrease the *percentage* of absolute alcohol.

Thus, a given weight of alcohol, multiplied by its percentage strength, gives the weight of absolute alcohol. The same alcohol diluted, and the resulting weight multiplied by the resulting per cent gives exactly the same weight of absolute alcohol as in the first case. Bearing in mind this fact, a simple rule for diluting alcohol to any required strength can be deduced. It might be stated thus: Having a given weight (W) of an alcohol of known per cent (P), to dilute to an alcohol of required per cent (ρ).

Then $\rho : P :: W : x$

$x = \frac{P\,W}{\rho}$, the weight of the required alcohol.

And, $x - W$ = weight of water to be added.

Stated in words, the rule is, multiply the given weight of alcohol to be diluted by its per cent, and divide the product by the per cent of the required alcohol. From the number thus obtained, subtract the given weight of alcohol, and you have the weight of water to be added. Taking the example which Prof. Wenzell gives, we have 11 parts of alcohol of sp. gr. .835 = 85 per cent, to dilute to an alcohol of sp. gr. 941 = 39 per cent.

Then $\frac{11 \times .85}{.39} = 24$, the weight of the required alcohol. $24 - 11 = 13$, the weight of water to be added.

By the above proportion, another important problem can be solved.

Having an alcohol of known per cent (P), to make a certain weight (W) of an alcohol of a certain per cent (ρ), how much of the alcohol, and how much water will be required?

Then, $P : \rho :: W : x$

$x = \frac{W\rho}{P}$, the weight of the alcohol to be taken, $W - x$ = weight of water to be taken.

Rule: Multiply the weight of the alcohol to be made by its per cent, and divide the product by the per cent of the alcohol to be diluted. This gives the weight of the alcohol to be diluted. Subtract this weight from the weight of the alcohol to be made, and the number obtained is the weight of water required.

Example: To make 24 parts of 39 per cent

alcohol from an 85 per cent alcohol, $\frac{24\times.39}{.85}=11$, the weight of 85 per cent alcohol required, and $24-11=13$, the weight of water required.

Of course, these two rules apply to alcohols of all strengths, and to any required dilution.

Another problem which frequently occurs is that where two alcohols of different strengths are given, the weight and per cent of one, and the per cent of the other being known; and it is required to make an alcohol of a certain intermediate strength by mixing the two.

The rule in this case depends upon the fact that the weight of the one into its percentage strength, plus the weight of the other into its percentage strength, equals the sum of their weights into the percentage strength resulting from their mixture. In other words, the absolute alcohol calculated from the two is the same as that calculated from their mixture. Put in the form of a problem, it would be stated thus: Having a given weight (W) of an alcohol of known per cent (P), to make an alcohol of required intermediate per cent (ρ) by the addition of an alcohol of greater or less known per cent (ρ').

Bearing in mind the principle upon which the rule rests, we have (representing by x the unknown weight of the alcohol to be added)

$WP+x\rho'=(W+x)\rho$

$WP+x\rho'=W\rho+x\rho$

$x\rho'-x\rho=W\rho-WP$

$x=W\frac{\rho-P}{\rho'-\rho}$ = the weight of the alcohol to be added.

Rule: Take the difference between the per cent of the required alcohol and the per cent of the given alcohol. Multiply this difference by the given weight of alcohol, and divide the product by the difference between the required per cent and the per cent of the alcohol to be added. The number obtained is the weight of the alcohol to be added.

Example: Given 76 parts of 92 per cent alcohol, to make a 50 per cent alcohol by the addition of a 22 per cent alcohol. How much of the 22 per cent alcohol must be added?

$76\frac{.50-.92}{.22-.50}=114$, the weight of the 22 per cent alcohol to be added.

To prove the correctness of the answer:

92 per cent of 76 = 69.92 abs. alc. before mixing.

22 per cent of 114 = 25.08 a. a. before mixing.

50 per cent of 190 = 95 a. a. after mixing.

Another problem, a modification of the last, would also sometimes occur in practice. It is this: Suppose it is desired to make a certain weight of an alcohol of a certain strength by mixing two alcohols of different strengths. How much of each will be required? This problem is best illustrated by an example.

Suppose it is required to make 140 parts of 85 per cent alcohol, by mixing 92 and 39 per cent alcohols. How much of each will be required?

Let x = weight of 92 per cent alcohol. Then $140-x$ = weight of 39 per cent alcohol. The weight of absolute alcohol calculated from the two must be the same as that calculated from their mixture. Therefore,

$.92x+(140-x).39=140\times.85$

$.92x+54.6-.39x=119$

$.92x-.39x=119-54.6$

$x=\frac{119-54.6}{.92-.39}=121.5$, the weight of the 92 per cent alcohol.

$140-121.5=18.5$, the weight of the 39 per cent alcohol.

From the value of x in the above example, the following rule can be deduced.

Rule: Multiply the desired weight of alcohol by its per cent, and subtract from the product the desired weight of alcohol, multiplied by the per cent of the weaker of the two alcohols.

Divide the number thus obtained by the difference between the per cent of the stronger and the per cent of the weaker alcohol. The quotient is the required weight of the stronger alcohol. Subtract this weight from the weight of the desired alcohol, and the difference is the required weight of the weaker alcohol.

It is evident that all of these formulas and rules would apply to hundreds of other cases, besides the particular case of alcohol here considered; such as the diluting and mixing of any of the acids, solutions of any of the salts, syrups, etc., and in fact in all cases where the per cent by weight of the valuable constituent is known. It is only necessary to keep in mind, when diluting or mixing solutions and mixtures, that we do not change the *actual* amount of the valuable constituent, but merely change the *relative* amount *i. e.*, increase or decrease its per cent. All calculations should be based upon this fact.

As the rules here given show, it is unnecessary to take into account both the per cent of the valuable constituent and per cent of the worthless constituent, whether it be water or any other solvent or diluent.

If the Committee of Revision should adopt parts by weight in the next Pharmacopœia, such problems as the foregoing would be of frequent occurrence.

36 Doughty St., Brooklyn, N. Y.

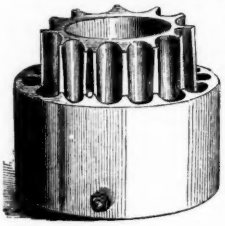
Twice-Distilled Water for Hypodermic Solutions.—Dr. H. Hager thinks it advisable to advocate the use of twice-distilled water for solutions intended for hypodermic purposes. This had already previously been recommended for various refined uses, but his opinion has lately been strengthened by reports received from others, which spoke unfavorably of the use of simple distilled water, particularly for solutions to be used hypodermically.—*Pharm. Centralh.*, No. 45.

[Original Communication.]

A NEW SUPPOSITORY MOULD.

Editor of New Remedies:

Dear Sir:—I send you by express to-day a suppository mould which is the result of some study suggested by the apparent defects in the many moulds you have described in New Remedies. Experiment with cacao butter showed that its *adhesion* to metal surfaces exceeded its *cohesion*. Hence any of the usual moulds which opened by parting, like bullet moulds, would exert a tensile strain on the butter and break it in nine times out of ten. Many pharmacists insist on making suppositories by the melting plan, and a model seemed to be needed. I got all the forms which are made and tried them. As a result I devised this one which compresses the suppository as the mould opens. I never knew of a broken suppository after a person had become accustomed to the apparatus. I have had about fifty made, and they are all in use and pronounced excellent.



It may interest you or your readers, and for that reason I send it. You are requested to turn it over to any prescriptionist who is interested, for opinion, etc. I am not in the business and can sell no moulds. I have patented it (patent yet to issue) and some day somebody may take interest enough in it to make them, but for the present they are not in the market. These moulds, if in the market, would retail, unplated, for $1.75.

Yours truly,

J. W. See.

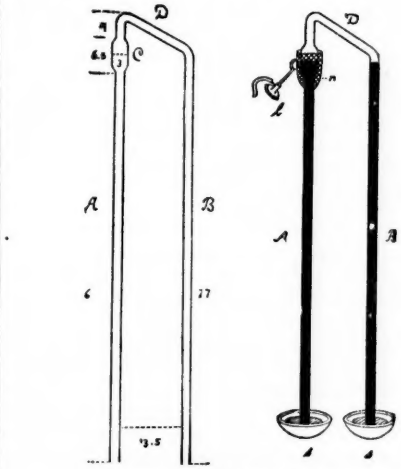
Hamilton, Ohio, Nov. 4th, 1879.

[The mould sent to us is of brass, nickel-plated, and has a capacity of twelve cells, holding 360 grains. As a mass, 11 parts of cocoa butter to 1 of white or Japan wax are recommended. In using the mould, it is first to be cooled and then the mass, melted to a consistency that will permit it to flow, is poured in. When the mass has become solid, the binding-screw is loosened and the central portion of the mould is pushed slightly downward, to detach the suppositories from its surface, and then upwards and entirely out, bringing the suppositories with it. The adjoining illustrations will show the arrangement of its parts.—Ed.]

A new and ready Method for preparing Hydriodic [and Hydrobromic] Acids.

Prof. Cl. Winkler has proposed a new process for preparing hydriodic acid, which is very simple and readily executed. It is as follows: Dissolve such an amount of iodine as is intended to be converted into hydriodic acid in carbon disulphide, which is capable of taking up a very large quantity; pour this solution into a tall glass-cylinder, cover it with water—more or less, according as a stronger or weaker acid may be desired—and then by means of a delivery tube, reaching to the bottom of the iodine solution, pass a stream of sulphuretted hydrogen gas through the liquid. The latter converts the iodine into hydriodic acid, which will dissolve in the supernatant water without loss, and the separated sulphur will dissolve in the carbon disulphide. The reaction is finished when the latter liquid ceases to have a violet color. The aqueous solution of hydriodic acid is now separated and boiled for a short time to remove sulphuretted hydrogen. The resulting acid is perfectly pure; and the oily solution of sulphur may be distilled to recover the carbon disulphide.—*Pharm. Centralh.*, No. 43.

[We have tried this process for preparing hydrobromic acid, and find it to work very well. The most suitable quantities are: Carbon disulphide, 3 parts; bromine, 2 parts; distilled water, 8 parts. This yields an acid of about the spec. grav. 1.090.—Ed. N. R.]



Apparatus for Distilling Mercury.

Dr. Leonhard Weber describes an apparatus which may be used for purifying impure mercury, and which works almost automatically and is quite inexpensive.

A glass-tube, bent and shaped in the manner indicated in the cut, and of the dimensions there given—the figures mean centimetres—is at first filled with pure mercury. The ends being now closed, the apparatus is inverted, the open ends immersed into two capsules, *s* and *s*, and the whole firmly fixed in a retort stand. The upper portion of the apparatus will now show a vacuum, and, as will be noticed, this portion of the apparatus will resemble in shape a retort, with an open tube at the bottom, and a very long neck. The bulb *C* is now surrounded with the

wire-gauge net *n*, and a very small flame from a Bunsen's burner applied to the upper portion of the mercurial layer. This will gradually volatilize the mercury, which condenses in the other limb. The mercury in the capsule *s* is gradually replaced by the stock of impure mercury to be purified, and pure metal now and then removed from the other capsule, until all the impure stock is used up. The quantity which may be distilled in twenty-four hours is about two kilograms.—*Carl's Rep. f. Exp. Phys.*, 1879, 52.

[Original Communication.]

MISCELLANEOUS CONTRIBUTIONS FROM THE ORIENT.

BY XAVER LANDERER.

On false so-called American Pistachio-Nuts.

Jews from Saloniki have discovered a new method for cheating the gullible inhabitants of the Levant, and have used it this year for the first time. They are quite numerous as fruit-sellers on street-corners, dealing in almonds, mastic, dates, and other kinds of fruit. This year they have also sold so-called "American Pistachio-Nuts," a small glassful at 5–10 leptas (1–2 cents), in large quantities. Prof. Landerer has sent us a small invoice as sample, and accompanied them with a short note. On opening the package we at once recognized our old familiar *pea-nuts** which we will state for the benefit of our Greek friends may be obtained here in unlimited quantities.

Oriental Cosmetics and Perfumes.

Oriental ladies use for the preservation of a clear and transparent complexion, among other things, a water prepared by digesting in it cucumbers (*αγκουρια*, angkuria). This is particularly used by the Mohammedan beauties. A pomade for this purpose is also prepared by boiling fresh cucumbers with oil or simple pomade. There are several Oriental plants from the flowers of which excellent perfumes might be obtained on the large scale. One of these is *Melia Azedarach* L. (*παασχαλιά*, paschalia, so called because it flowers about the time of Easter or *παασχαλια'*). The flowers of *Pancratium maritimum* L.,† growing along the seashore, likewise have a fine odor. The same is the case with the flowers of *Acacia Farnesiana* L., well known as the source of the so-called cassie-flowers, from which the "pomade de cassie" is made in Provence. All these might be obtained in Greece for export, or else, suitable perfumes might be produced on the spot by the process of digestion with oils or fats (enfleurage).

* From *Arachis hypogæa* L.

† Or *Scilla Pancratium* Steinh. The root of this plant has a nauseous taste, and was at one time officinal in several pharmacopœias as Radix Pancratii Monspessulani, or R. Scillæ minoris.

Popular Remedy for Colic.

The common people in the Levant use a strong decoction of Thymus Thymbra [*Satureia Thymbra* L.], or *αγριόθυμος*, as a remedy for colic, with great success, as Landerer says. Of course, the carminative properties of many other labiate plants would probably answer the same purpose.

Greek Wines.

Greece, and particularly the islands of the Archipelago, produce a great variety of excellent wines, which have lately attracted the attention of eminent therapeutists in Europe. The most favored island is Santorino, the ancient Thera or Kalliste, being the most southern island of the group of the Cyclades, and belonging to Greece. A variety of wines are produced there, both red and white. The best red wine is called Santorin (or Santo, Vino di Baccho), representing a dry, fine-tasting claret, with an approach to port. Another fine (white) wine is called Vino di Notte (night wine). There are two varieties of this, one, named Kalliste, being stronger and richer; the other, called Elia, somewhat weaker, but both possessing a fine bouquet and equal to the best French wines, particularly for table use. The "king" of Greek wines, however, is the Vino santo, likewise produced in Santorino, occurring in two varieties: dark-red and amber colored. This wine is sweet, rich, very dry, and has a strong stimulating aroma. The finest other wines are the following: Palea, Rombola, Mavrodaphne and Malvasia, of Cephalonia; Achaia, Malvasia and Mavrodaphne, of Patras; Jenerodi of Zante; the red wines of Tinos, Zea, and other places of the peninsula of Morea; Malvasia of Ministra and Napoli; and the wines of Gamos and Paxo.* Those who do not have a chance of selecting or importing them direct from Greece, may obtain a full line of them from J. F. Menzer, at Neckargemünd, in Baden, Germany.

Pitch Wine.

It is a very common practice in Greece to add to wine, while it is fermenting in the casks, a certain quantity of rosin or pitch, which imparts to the wine a peculiar pitchy or smoky taste, much liked by certain classes of the inhabitants. This seems to be a very ancient custom, for it is mentioned in the old classic literature. The cellars in which this fermentation is carried on become filled with carbonic acid gas so that great caution is required in entering them and working there. Quite a number of deaths by suffocation are annually recorded.

* Mr. Georgios N. Zavitsanos, in his *Syntagologia* (see page 24), says (on page 161, note): "We think that all our domestic [Greek] wines may be used for therapeutic purposes, provided they contain about 15% of alcohol, and 10% of added sugar, and are free from rosin or gypsum." The rosin refers to the practice of "pitching" wines, mentioned in the next paragraph above. Sugar is added to those native wines which are naturally too sour.

[Original Communication.]

APIOL.

BY H. C. WHITNEY.

The seed of Apium Petroselinum has variously been made the subject of research and analysis by different parties; prominent amongst them Messrs. Joret and Homolle of Paris, who claim to have found therein, besides a crystallizable fatty matter, pectine (the apiin of Braconnot), chlorophyll, tannin, coloring and extractive matters, lignin, various salts, volatile oil, and a peculiar oily substance for which they proposed the name of apiol.

This is said to be a yellowish oily liquid, non-volatile, heavier than water, of a peculiar and tenacious odor, distinct from that of the plant, and of an acrid, pungent taste. They also claim it to be inflammable, insoluble in hot or cold water, very soluble in alcohol, and entirely dissolved by ether or chloroform. It is analogous to the fixed oils, but is not chemically changed by the alkalies.

The process given by them for obtaining the so-called apiol is as follows: They exhaust the seed with alcohol, treat the tincture with purified animal charcoal, distil off three-fourths of the alcohol, treat the residue with ether or chloroform, evaporate the solution thus formed, mix the residuary liquid with an eighth of its weight of litharge, allow the mixture to rest twenty-four hours, and then filter through a thin layer of charcoal.

I found, in reviewing this process, that the alcohol dissolves from the seed the apiin, essential oil, resin, and the supposed apiol.

After the treatment with ether or chloroform, the oil, resin, and apiol are separated from the pectine, and being mixed with an eighth of its weight of litharge for the purpose of removing what fat oil it may yet contain, besides the saponifiable resin, it is allowed to stand for a certain length of time and filtered, and the product thus obtained is what they named apiol. After the apiin is separated by ether or chloroform and the fatty oil and resin by litharge, the mere act of filtering through charcoal certainly cannot separate the essential oil from the peculiar oily substance which they want to obtain, but must pass through the filter with it, so that what they obtain as pure apiol can only be an impure essential oil obtained by the absorption process as lately proposed.

To substantiate this idea, I took freshly powdered parsley seed, subjected it to repeated distillations with water until the latter passed entirely clear, obtaining thereby water strongly impregnated with the volatile oil of parsley seed. The oil at the bottom thereof being separated therefrom, the water was subjected to cohobation from a solution of sodium chloride, yielding the entire quantity of oil contained in the seed; which in this instance amounted to 4.27 per cent. The oil so derived corresponded closely to the so-called apiol of Joret and Homolle, with the exception of its being lighter in color and evidently purer than theirs.

The residue of the distillation was strained while hot, separating the (by distillation) exhausted seed; the liquid yielding, upon being filtered, a large quantity of apiin on cooling. The residuary seed, being treated with petroleum benzine, gave 9.114 per cent of a green fatty oil and liquid resin. Being subsequently subjected to the action of ether, gave 2.734 per cent additionally of fatty oil and resin; the latter being separated, as in the former case, by shaking it with alcohol. The fatty oil, being entirely freed from resin, amounted to 7.239 per cent. The different portions of alcohol containing the resin, dissolved from the fatty oil, gave upon evaporation a greenish-brown oily liquid, lighter than water and readily saponified by the fixed alkalies, with a peculiar odor distinct from that of the essential oil, which in all but the latter respect differs from the apiol of Messrs. Joret and Homelle.

Of late Mr. E. V. Gerichten (*Berichte der Deutschen Chemischen Gesellschaft*, Nos. 16–17) claims to have found during his researches and investigations in parsley seed a body for which he proposed the name of apiol, or parsley camphor, and asserts that it is the only substance which is entitled to that name.

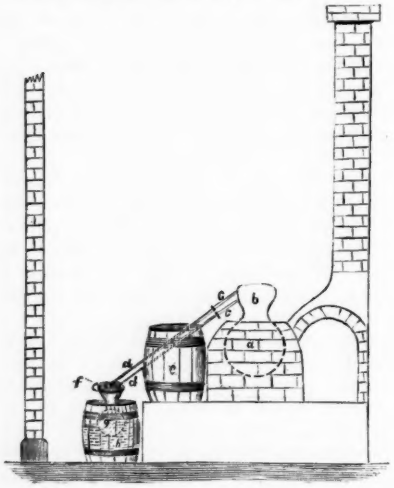
He finds that it is obtained during the distillation of the oil of parsley seed from the seed with water; which would be at a temperature not much above 212° F., whereas he subsequently claims for it a boiling point of 300° C.

How this occurs is to me not exactly comprehensible, since I failed, during a number of experiments therewith, to discover any separation of the fine needles of the parsley-camphor which he claims to have found. He further gives a method for obtaining the same by a direct process, which, after all, does not materially differ from that of Messrs. Joret and Homolle and which certainly, as I have conclusively proven above, does not yield anything else than the impure essential oil as obtained by the absorption process.

The apiol or parsley-camphor of Mr. E. V. Gerichten must have been derived by a different process than described by him in his paper. It makes but little difference, however, for the apiol of Mr. E. V. Gerichten can be of little more than chemical interest, while the article of that name by Messrs. Joret and Homolle is that which is so much valued for its emmenagogue properties and which alone finds therapeutical application. As the latter article is certainly nothing but a complex body, not saponifiable by fixed alkalies, which does not congeal at a temperature of 32° F., and, contrary to the statement of Messrs. Joret and Homelle, comes over almost entirely at a temperature of 212° F.,

I am safe to say that it is principally composed of the essential oil of parsley-seed intermixed with small quantities of a soft resin, which latter is in such minute quantities that I can readily infer the emmenagogue properties to be contained in the volatile oil, and would suggest, therefore, that the apiol of the present be superseded by the term, Oil of Parsley-Seed, from which the medical profession no doubt will receive the same emmenagogue effect; or, if such is not the case, that the soft resin, which is one of the constituents of the apiol of old, be separated by the process I have above indicated and employed for the purposes which apiol has been used for until now.

GLASSBORO, N. J., November 29th, 1879.



Preparation of Oil of Turpentine from Pine-Cones.

IN some districts of Thuringia, Germany, it has been customary for a long time to utilize pine-cones for the preparation of oil of turpentine. The pine-cones are sold by the forest officials on account of government, and are collected by gathering from the trees before they are completely ripe. They are then stored in flat sheds, lightly covered with brush, for 3 to 5 months, until they have become thoroughly loose. The apparatus used for distilling the oil of turpentine consists of a kettle *a*, set in brick, surmounted by a tight-fitting copper head *b*, from which two tinned iron tubes, *c c*, about the calibre of rifle-tubes, project downwards, and are joined to similar tubes passing upwards through the condensing barrel *e*, and meeting them. The condensed liquid runs through a funnel *f* into the glass-globe *g*, which has an opening at the lower end, closed with a stopper, and floats in the water contained in the barrel *h*. The operations are begun by washing, in a wooden trough with wooden stamps, as many pine-cones as may be introduced into the kettle, together with $\frac{1}{5}$ to $\frac{1}{10}$ of their volume of water. The addition of the latter is regulated by the degree of dryness of the cones. In the course of about twelve hours the distillation is completed.—*Indust. Bl.*, No. 35.

[ORIGINAL COMMUNICATION.]

A CATARRH CURE.

BY HANS M. WILDER.

WHEN people get a cold on the chest, as they call it, among other good things are prescribed the wearing of a respirator when out of doors, and, when at home, balsamic inhalations or sprays.

I should think both things combined—a medicated respirator, so to call it—would be a decided improvement. Let the respirator be soaked or sprinkled with the same balsamic mixture which patients are ordered to use indoors as inhalation. When they use the respirator, prepared as above, away from home, the air which they inhale will always be charged with the vapors of the inhalation, although in a less degree, and in this way their air-passages will be continuously under treatment and consequently recover so much the quicker.

I got this idea from personal experience. Having a heavy cold in the head, I got a bottle of Hager's Olfactorium anticatarrhoicum (see below) with addition of a little essential oil of cubebs. This bottle I carried in my upper waistcoat pocket; the stopper came off and the contents were spilled on my clothes. Wearing the same clothes, I was constantly enveloped in a balsamic atmosphere and got completely rid of my cold and accompanying hoarseness in four days; ordinarily it takes a couple of weeks.

Olfactorium anticatarrhoicum.

Acid carbol. pur.	5 parts.
Alcohol.	5 "
Aq. ammon.	6 "
Aquæ.	10 "

A few days after being mixed it turns bluish-black (through formation of aniline) and acquires a more disagreeable odor; the best way to make it is to dissolve the carbolic acid in alcohol by itself in one bottle, and the diluted ammonia in another bottle. When using, pour from each bottle a few drops into a tumbler or cup, shut the eyes and inhale the vapor through the nose and mouth; it is smarting at first, but one soon gets used to it. The quantity of the ammonia may, of course, be decreased.

NEW YORK, December 8th, 1879.

Neutral Ammonium Citrate and Phosphate.—F. SESTINI has obtained *neutral* ammoniacal salts of citric and phosphoric acid, in form of crystals, by allowing the respective solutions, placed over caustic lime, to evaporate in an atmosphere of ammoniacal gas. The citrate has the formula: $(NH_4)_3C_6H_5O_7.H_2O$; the phosphate: $(NH_4)_2PO_4.5H_2O$.—*Gaz. Chim. Ital.* in *Berl. Ber.*, 1927.

[ORIGINAL COMMUNICATION.]

ON EXTRACTS OF MEAT.*

BY ADOLPH TSCHEPPE.

LIEBIG'S extract and the extracts from Montevideo, San Antonio (Texas), Adelaide (Australia), Fray Bentos (Uruguay) are made by extraction with cold water, and subsequent heating to the boiling point; in this way, all albumen coagulable by heat, gelatin, and fat are left behind. They are, therefore, not nutrients at all, but must be considered as nervous stimulants, like tea, coffee, chocolate, brandy, and similar articles. On analysis, they will be found, on the average, to contain:

Dry substances	78–85 per cent.
Ashes	15–22 "
Organic substances	50–65 "
Extractive, soluble in alcohol not less than	65 "

Meat, freed from fat, contains:

Dry substances	21. 5 "
Nitrogenous substances	22.17 "
Ashes	1.20 "

The amount of water varies with the different extracts from 16–32 per cent.

Besides the above, there have of late appeared various other makes under different names, which claim to be an improvement, inasmuch as they are stated to contain albumen and other nutritive substances not found in Liebig's extract. On analysis, however, this was shown to be a delusive statement.

Johnston's Fluid Beef.—The want of albumen is here supplied by the meat itself, which, after being extracted, is dried, finely ground, and mixed with the inspissated extract so as to form a pulp. The striated muscle fibres are plainly visible under the microscope. It contains:

Insoluble substances, being the powdered meat	25.2 per cent.
Soluble extract, analogous to Liebig's extract	52.6 "
Ashes	12.5 "
Water	22.5 "

This extract contains no albumen coagulable by heat.

Valentine's Meat-Juice.—This preparation scarcely deserves the name of an extract. It is stated to be made by partly roasting the meat, by which process the albumen coagulates, and obtaining the juice by subjecting to hydraulic pressure. It contains:

Dry substance	54.40 per cent.
Water	45.60 "
Organic substances	46.16 "
Ashes	8.24 "

This extract contains no appreciable amount of albumen coagulable by heat; by the process of roasting, a minute quantity is peptonized. Compared with Liebig's extract, it is very expensive, the price being double, and the strength less than two-thirds.

London Essence of Beef.—This cannot be understood to mean a condensation or concentration of the juices of meat, since it contains more water than the substance from which it has been prepared, and less solid substance than meat does. It forms an easily liquefied jelly, very prone to putrefy. It does not contain coagulable albumen, but the jelly does not altogether consist of gelatin, since its aqueous solution yields a precipitate on neutralization with limewater, and otherwise clearly denotes the presence of considerable quantities of syntonin (acid albumen), limited, however, by the small percentage of organic substances in this essence. It contains:

Dry substances	12.20 per cent.
Organic substances	14.79 "
Ashes	2.41 "
Extractive, soluble in alcohol	9.00 "
Water	82.70 "

Mensman's Peptonized Beef.—This preparation might be supposed to differ from the other preparations of beef, since one would infer from its name that the coagulable albumen had been converted into non-coagulable peptone. Tests fail, however, to indicate any appreciable quantity of peptone.

The peptonized beef is a turbid liquid, which after filtration has the color of blood; it yields, by heating to the boiling point, a considerable quantity of coagulated albumen. The presence of coagulable albumen and of blood is incompatible with the process of peptonization, since both of these substances are the first to be changed in their nature by the action of the acid necessary for the successful completion of the process. It contains:

Insoluble substances	0.16 per cent.
Albumen and coloring matter from blood	1.20 "
Dry substances, obtained after filtering off from the coagulated albumen	4.40 "
Solid substances, altogether	5.76 "

On Gluten-Bread.

GLUTEN represents the nitrogenous albuminous constituents of grain, particularly of wheat. During the manufacture of starch from wheat, the gluten is finally left behind, to the amount of 12 to 20%, as a grayish-yellow, very tough mass. Formerly it was permitted to decompose in the liquid containing the starch, and its products of decomposition were then washed away. But since its high nutritive value has been recognized, it is employed for various purposes in articles of

* Read at a conversational meeting of the N. Y. College of Pharmacy.

food. Being of its nature incapable of furnishing sugar by fermentation, and yet possessing nutritive value, it has been selected as a base for the diet of diabetic patients with good success. The favorable reports concerning its use in diabetes were some years ago somewhat obscured by the statement of Boussingault,* that certain gluten-breads, manufactured for this very purpose in Paris, were of inferior composition. Mr. K. Birnbaum,† of Karlsruhe, states that the Paris makers use a highly nitrogenous gluten. This, when washed and air-dried, is so tough that it cannot be converted into fine flour. Hence about 5% of wheat flour is added to it while moist, when it may be, after drying, reduced to a fine powder, of a yellowish, Indian-corn color, which is converted into bread by means of water and yeast in the usual manner. It is baked to complete dryness, when it constitutes a very frail substance, resembling bread externally in appearance, but consisting internally, instead of crumb, of a network of transparent skins or walls enclosing large air-spaces.

In Mannheim, Germany, the gluten is worked by itself without any addition. After having been washed until the water kneaded with it ceases to become cloudy, it is allowed to remain under water for twenty-four. During this time fermentation begins to set in, which destroys its toughness. It may then be divided and mixed with fermented dough. As soon as the mass "rises," it is baked, or rather, thoroughly dried in the oven. The resulting product has the same appearance as the French. The fermented dough used, is a portion of fermented gluten remaining from the last operation. Wheat-flour is never used in its preparation. 100 kilos of wheat-flour, in Mannheim, finally yield 12 to 13 kilos of gluten-bread, which is sold at the rate of 10 marks ($2.40) per kilo (corresponding to about 64 biscuits). The bread is made only in summer, and may be kept uninjured for years.

As pure gluten-bread has an insipid taste, the Mannheim factory also turns out other sorts, which are more savory, and may be used in place of it, according to circumstances. One kind of bread contains, besides the gluten, 10% of wheat-flour, or 10% of wheat-bran; other kinds consist of mixtures of gluten with properly prepared almonds, deprived of saccharine and starchy matters, or with inulin. The latter is the peculiar variety of starch found in the roots of composite plants, and is manufactured by Witte, of Rostock, from chicory-roots, at the rate of 9 to 10 marks per kilogram. This carbohydrate, according to Dragendorff, is not converted into sugar when taken by diabetic persons.

The composition of five varieties of the German gluten-bread is given by Mr. Birnbaum as follows:

Constituents.	Gluten-Bread.	Gluten-Bread, with 10% Flour.	Gluten Bread, with 10% Bran.	Gluten-Almond Bread.	Gluten-Inulin Bread.
Proteïn-Bodies...	76.37	74.50	73.44	57.31	58.31
Carbohydrates..	10.53	12.70	12.81	12.67	27.24
Fat.....	2.00	1.80	2.92	19.06	2.55
Ash.....	2.63	2.60	2.10	3.76	3.15
Water.....	8.47	8.40	8.73	7.20	8.75
	100.00	100.00	100.00	100.00	100.00
Nitrogen.....	12.22	11.92	11.75	9.17	9.33

—After *Dingl. Polyt. Journ.*, Vol. 233, p. 322.

An Improved Water-bath with Safety-Screen.

We have already described the simple but ingenious contrivance for preserving a constant level in water-baths, which forms one of the features of the apparatus here illustrated. There is, however, an improvement added, devised by Dr. R. Muencke, which is intended to prevent the contact of heavy inflammable vapors given off during the evaporation with the flame of the gas-jet. The Bunsen burner passes through a central opening in the bottom wire-disk, and the flame is, therefore, surrounded on all sides, except the top, by a close wire net, which prevents the ignition of vapors outside of it.—*Pharm. Zeit.*, No. 83.

On the Coto-Barks and their characteristic Constituents.*

In the spring of 1873, a London importing house sent to a member of the firm of Jobst & Hesse, of Stuttgart, a sample of a bark sent from Bolivia, which was labelled "China Coto," but had no resemblance whatever to true cinchona barks. Prof. Wittstein received a similar sample, about a year later, from the firm of R. Martens in Hamburg, and was at the same time informed that the bark was collected at the so-called "missiones" in the interior of Bolivia, whence the

* *Ann. de Chim. et. Ph.*, 1875, p. 114.

† This article is based on a paper of Mr. K. Birnbaum in *Dingl. Polyt. Journ.*

* Abstract of a paper by Jul. Jobst and O. Hesse, in Liebig's Annalen der Chemie, vol. 109, pp. 17–96.

true cinchona barks are likewise exported; and that it was used internally, either in substance or in form of alcoholic extract, against diarrhœa, colic, and neuralgic toothache, and externally, in form of tincture, against rheumatism and gout. Martens supposed the bark to be derived from a species of Cinchona; Wittstein, however, suspected it to belong rather to a tree of the nat. fam. Lauraceæ or Therebinthinaceæ. The name Coto-bark, or Coto-Coto, occurs also in Brazil, where it designates the bark of *Palicurea densiflora* Mart., nat. fam. Rubiaceæ. But it is not known whether this is the source of the present commercial Coto-bark.

"True Coto-bark," which is for the present thus termed to distinguish it from another variety afterwards introduced, was examined anatomically by C. Hartz.* His description amended by the authors of the present paper, is, in the main, the following:

It consists of flat, slightly arched pieces, up to 60 cm. (24 inch.) long, or partially in irregular fragments, being up to 60 mm. ($2\frac{3}{8}$ inch.) broad, and 8–14 mm. ($\frac{5}{16}$–$\frac{9}{16}$ inch) thick. Externally, the color is reddish cinnamon-brown, internally a little darker. The outer bark is generally wanting, and seems to have been removed on purpose; rudimentary traces of it are found only rarely. Its odor is at first agreeable, resembling that of cinnamon; it becomes more strongly developed during comminution, and finally causes violent sneezing. Its taste is biting, without being bitter, or gummy, or astringent.

Wittstein† found in this bark an ethereal oil, of an aromatic peppery taste, a volatile alkaloid, a yellowish-brown soft resin, a dark-brown hard resin, starch, gum, sugar, calcium oxalate; tannic, formic, acetic, and butyric acids. Jobst‡ discovered in it a crystallizable body, named *cotoïn*. The bark was carefully tested therapeutically by Prof. v. Gietl,§ who found it to be almost a specific for diarrhœa.

Not long afterwards, another so-called "Coto-bark" appeared in the market, having a great resemblance to that described above.‖ The latter was said to be collected on the banks of the Mapiri River in Bolivia. It came in pieces about 70 cm. (25 inch.) long, 40–70 ($1\frac{1}{2}$–$2\frac{3}{4}$ inch.) broad, and 12–18 mm. ($\frac{1}{2}$–$\frac{5}{8}$ inch) thick. The fracture and color of this variety are exactly like the former, but it is more frequently covered with the outer layer. Its odor is much weaker, agreeable, and somewhat resembling that of nutmegs; the taste is faintly pungent. It is packed exactly like the other, so that it is easily mistaken for the other. In order to distinguish this new variety, the authors proposed to call it Paracoto-bark. But in commerce it is often confounded with true coto-bark and sold for the latter; in fact, it is more frequently met with than the true bark, so that even some manufacturers of the active principles have used both varieties promiscuously, and have, therefore, obtained products of varying therapeutical properties.

Dr. Burkart tried an alcoholic tincture of paracoto-bark, and found that its effects resembled those of the true, but were considerably weaker. It agrees with true coto-bark chemically in so far that it contains, like the latter, piperonylic acid, but its other constituents differ considerably from the cotoïn and dicotoïn contained in the true bark. Paracoto-bark was found to contain: paracotoïn, the principal therapeutic constituent; hydrocoton, dibenzoylhydrocoton, leucotin, oxyleucotin, volatile oil, considerable quantities of liquid resins, and very small quantities of tannin. The authors could not discover, either in the true or in the paracoto-bark, a volatile alkaloid.

CONSTITUENTS OF TRUE COTO-BARK.

1. *Cotoïn.* This is prepared in the following manner. Coarsely powdered true coto-bark is exhausted with cold ether, most of the latter is distilled off, and the warm residue mixed with warm petroleum-ether. If the proper quantity of the latter has been added, a large quantity of a black-brown oily resinous mass separates on cooling. When the liquid has become clear, it is poured into a flat capsule and allowed to evaporate spontaneously, when cotoïn is gradually deposited in large sulphur-yellow crystals. A large quantity of the cotoïn, however, is transformed into the above-mentioned oily resinous mass. This is boiled with water and lime, and the hot, clear, yellowish-brown solution supersaturated with acetic or hydrochloric acid. After about twenty-four hours, the solution becomes clear, and large shining, yellowish crystals are formed, covered by pale-yellow groups of needles. The crude product is finally boiled with water and purified animal charcoal, and several times recrystallized, when it is obtained pure.

Pure cotoïn forms pale-yellow, mostly curved prisms, easily soluble in alcohol, chloroform, "benzin,"* aceton, and carbon disulphide, but insoluble in petroleum-ether. It is but very little soluble in cold water, although the latter acquires a decided yellow color; more so in hot. Caustic alkalies and their neutral carbonates dissolve it, but on addition of excess of hydrochloric or sulphuric acid it is again deposited. A stream of carbonic acid gas passed through the solution produces the same result. Cold, strong nitric acid becomes blood-red, with cotoïn; on heating, the latter gradually dissolves with blood-red color. On cooling or on the

* *Archiv d. Pharm.* [3], 7, 214 (1875).
† *Archiv. d. Pharm.* [3], 7, 219.
‡ *Neues Repert. f. Pharm.*, 25, 23 (1876).
§ Compare also NEW REM., 1876, 360.
‖ *Berichte d. Deutsch. Chem. Ges.*, 1876, 1633.

* Evidently means here "benzol," from coal-tar.

addition of water, the latter solution deposits a red resin. Concentrated sulphuric acid dissolves cotoïn with brown-yellow color. Concentrated hydrochloric acid becomes yellow, and on heating dissolves cotoïn; but on cooling, the latter crystallizes out, unchanged. The aqueous solution of cotoïn has a neutral reaction, and reduces, in the cold, silver and gold salts. Fehling's solution is reduced slowly in the cold, rapidly on heating. Ferric chloride produces in a dilute solution of cotoïn a brownish-black color, and in a concentrated solution, besides the color, a brownish-black precipitate. In an alcoholic solution of cotoïn, ferric chloride produces a deep brown-red color. Cotoïn has a sharp, pungent taste, its dust causes sneezing and coughing; it is optically inactive, not volatile, melts at 130° C., and has the composition $C_{22}H_{16}O_6$.

2. *Dicotoïn.* On treating crude cotoïn with boiling water, only cotoïn crystallizes out at first. If now the filtrate be again boiled with the residue, leafy crystals separate, at each succeeding operation, in increasing quantities. These crystals could not be separated from cotoïn by any other but mechanical means, viz., by picking them out. The authors, heretofore, named this body cotonetin, but, owing to the close relationship between it and true cotoïn, they now propose to name it dicotoïn. It has the composition $C_{44}H_{34}O_{11}$, forms shining, almost white scales, soluble in alcohol, ether, chloroform, ammonia, and soda. On heating it with potassa, it is converted into cotoïn. It gives the same reactions as the latter, with ferric chloride.

CONSTITUENTS OF PARA-COTO BARK.

1. *Paracotoïn.* Para-coto bark is exhausted with ether, the ether distilled off, and the residue allowed to stand a few days, when it will be filled with a mass of crystals consisting of paracotoïn, oxyleucotin, leucotin, and dibenzoylhydrocoton. The resinous mother-liquor having been removed, the crude crystals are subjected to fractional crystallization, when the paracotoïn will be obtained as first product. When pure, this forms pale-yellow shining scales, easily soluble in ether and chloroform, also in boiling alcohol, aceton, and "benzin," from which latter three it crystallizes out on cooling. It is slightly soluble in ammonia. Soda and potassa dissolve it likewise, but it is then quickly converted into a feeble acid, paracotoic acid, $C_{19}H_{17}O_7$. Paracotoïn has the composition $C_{19}H_{12}O_6$. It gives no reaction with ferric chloride (difference from cotoïn, dicotoïn, and hydrocotoïn). On heating it with potassa solution, it dissolves with yellow color, which soon darkens, and the solution then has a strong odor of *cumarin*. Distillation drives over a white fat-like substance of a penetrating cumarin odor, which the authors have named *paracumarhydrin*.

2. *Leucotin.* This is present in relatively larger proportion than the other constituents. It is easily obtained by treating the crystalline mass resulting from the evaporation of the mother-waters of paracotoïn with glacial acetic acid, which dissolves leucotin. The solution is deprived of acetic acid by evaporation and the residue crystallized from hot dilute alcohol, when leucotin is obtained in slender white prisms. It has the composition $C_{34}H_{32}O_{10}$.

3. *Oxyleucotin,* $C_{34}H_{32}O_{12}$, closely accompanies the paracotoïn in its solutions, but may be separated by careful fractionation of the alcoholic crystallizations. It forms large, heavy, white prisms, which are insoluble in alkalies.

4. *Dibenzoylhydrocoton* is separated by means of glacial acetic acid, which dissolves acompanying leucotin, and finally leaves the substance pure. It forms white, mostly whetstone-shaped curved prisms, and has the composition $C_{32}H_{32}O_6$.

5. *Hydrocotoïn,* $C_{15}H_{14}O_4$, remains behind in the resinous mother-water mentioned under the head of paracotoin. It may be extracted by dilute soda solution, decomposition with hydrochloric acid, and boiling the reddish resinous precipitate with alcohol. This latter solution, on cooling, deposits it in pale-yellow prisms. It is neutral. With ferric chloride it yields the same reaction as cotoïn and dicotoïn.

6. *Piperonylic Acid,* $C_8H_6O_4$, is obtained from the bark previously exhausted with ether, by means of lime, subsequent treatment with acid, and finally shaking with ether.

8. *Ethereal Oil.* This is best obtained by ether. It remains nearly all behind during the act of distilling off the ether from the ethereal solution, and may finally be separated by boiling water. The authors have thus obtained about 1 kilo of the oil. It is very mobile, colorless, neutral, and has a very pleasant odor. Its spec. gr. is 0.9275, it begins to boil at 78° C., but at about 220°–235° C. nearly half of it passes over. The authors succeeded in separating it into five characteristic hydrocarbons, which they named respectively α and β paracoten, and α, β and γ paracotol.

PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF THE COTO-BARKS AND THEIR CONSTITUENTS.

The results obtained with an alcoholic tincture of Coto-bark have previously been detailed. Dr. Burkart found that an alcoholic tincture of paracoto-bark produced similar results, but in a much inferior degree. It seems, however, that neither the true nor the para bark are quite suitable for administration, because they exert disagreeable secondary effects on the stomach; besides, paracoto-bark contains comparatively but little paracotoïn. This being the case, and there not being a reliable method for distinguishing the two tinctures, *recourse should only be had* to the proximate principles *cotoïn* and *paracotoïn*, both of which are regular articles of commerce.

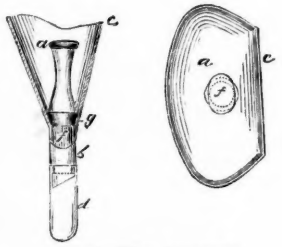
Doses and uses. *Cotoïn* is given in powder, 0.05 gm. ($\frac{3}{4}$ grain) every 2 or 3 hours. It may also be given in aqueous solution, best made in the proportion of 0.1 to 0.5 in 120 ($1\frac{1}{2}$ to 8 grains in 4 fl. $\frac{3}{3}$), with addition of some flavoring material. It is found particularly effective in chronic intestinal catarrh; also in phthisical diarrhœa.

Paracotoïn has no action whatever on mucous membranes. It is an equally effective remedy in intestinal catarrh and diarrhœas. The usual dose is 0.1 to 0.2 gm. ($1\frac{1}{2}$ to 3 grains) every 2 or 3 hours.

In general it may be said, that paracotoïn is an excellent remedy in catarrh of the intestines, and, so far as now known, also in cholera; cotoïn even exceeds the former in its curative powers of intestinal catarrh; but its effects in cholera have not yet been studied.

Apparatus for Filling Capsules.*

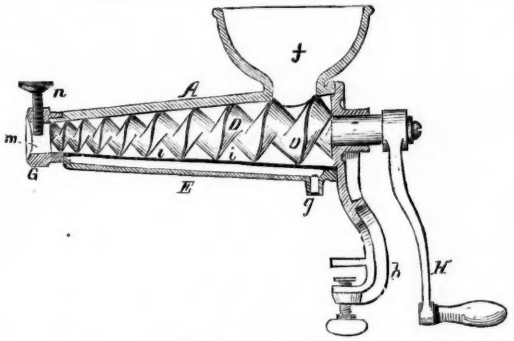
FRANKLIN E. DAVENPORT, of Auburn, Indiana, has patented an invention to facilitate the filling of capsules which consists of a funnel (*a*), flattened at one side (*c*) to facilitate the introduction of the charge. The spout of the funnel (*b*) is adapted to enter a gelatin capsule (*d*), and is bevelled at its end to facilitate its insertion. The capsule having been adjusted, the funnel is laid on its flattened side, so that the powder can be scraped into it. The whole being raised upright, a plunger (*f*) is used to pack the powder into the capsule, and an elastic collar (*g*) about its neck prevents its being forced too far into the nozzle.



Capsule-filling Apparatus.

A New Tincture Press.†

JOHN G. BAKER, of Philadelphia, Pa., is the inventor of a novel tincture press, the patent for which he has assigned to the Enterprise Manufacturing Co., of the same place. The adjoining illustration is intended to show a vertical longitudinal section of the press, which consists essentially of a tapering cylinder (*A*) with a hopper (*f*) on the upper side at its large end, and a screw (*D*) fitting closely to the inner surface of the case, the thread of which diminishes in pitch as the screw becomes smaller. Along the under side of the cylinder is formed a channel (*E*), adapted to receive a perforated brass plate (*i*, *i*). This latter has a transverse concavity corresponding to that of the inner surface of the cylinder, and the perforations allow the escape of the expressed fluids into the channel or gutter beneath, from which it escapes by a proper outlet (*g*). The substance to be expressed is placed in the hopper, and the crank (*H*) attached to the screw being turned in the proper direction, the thread of the screw compresses the substance into a smaller and smaller space until, finally, it is discharged at the farther end of the cylinder in a comparatively dry state. A screw (*n*) passing through a removable end of the conical cylinder (*G*) regulates the size of the outlet (*m*), and serves to increase or diminish the amount of pressure to which the mass is subjected by the screw. The brass plate in the bottom of the machine can be replaced by others, having perforations of different sizes. Clogging of the holes by bits of wood, stems or seeds is prevented by the shearlike action of the edge of the screw-thread, which shaves off the protruding fragment, while the balance is forced through the perforation. To increase the power of the press upon slippery substances, the inside of the casing has a few longitudinal or spiral grooves at a greater or less angle to the direction of the screw-thread. Arrangemements are provided for detaching the casing from the screw and for attaching the whole to the edge of a table or bench.



Baker's Tincture Press.

Professor J. P. Remington, who has used the press, says that he has done so "with great satisfaction in pressing juices from fruits, recovering alcohol and weak tinctures from percolation residues, and it is particularly useful with such drugs as arnica flowers, hops, etc., and those bulky, absorbent drugs that succeed so well in wasting alcohol. In expressing opium mass, in preparing aqueous extract of opium, it is very

* Patent No. 221,534, dated Nov. 11th, 1879.
† Patent No. 220,112, dated Sept. 30th, 1879.

useful; the only class of drugs which cannot as yet be successfully treated are those in very fine powder, or such as are of very sticky or tenacious character."

Professor Remington also remarks that this press not only avoids the use of press cloths, but "the residue is delivered uniformly dry, and thus the objection to most of the presses which leave the cake comparatively dry on the surface, but with varying amounts of moisture in the interior, is avoided."

Scheibler's Extraction Apparatus.

C. SCHEIBLER, in Berlin, has patented the apparatus here described, and intended for the exhaustion of substances by means of volatile liquids.

The glass-tube *A*, which is provided with two small openings at *o o*, and has an obliquely cut-off contracted point, is inserted air-tight into the ground neck of the outer glass-tube *B*. Into the lower part of *A*, just before it contracts, a small disc *a*, of felt, or asbestos, glass-wool, or similar filtering material is inserted. By means of a funnel, the substance to be extracted is now introduced and carefully packed. The lower end of *B* is then connected with the flask containing the menstruum, and the upper part of the tube *A* is connected with the upright condenser *D*.

On first starting the process, heat is applied to the flask *C*, the vapors of the liquid rise, and pass through the openings *o o* into the condenser, whence they are returned in a liquid state upon the substance contained in the tube *A*. The saturated solution flows back into the flask, and the menstruum is again converted alternately into vapor and liquid until the substance is exhausted.—*Dingler's Pol. Journ.*, Vol. 234, p. 128.

[ORIGINAL COMMUNICATION.]

ON FLUID EXTRACT OF IPECACUANHA AND ON EMETIA.*

BY ANDREW T. SNELLING, PH.G.

THE fluid extract made by the formula given in the Pharmacopœia does not meet the desire of the pharmacists, as when mixed with syrups and other preparations a dense precipitate is formed. After several attempts to make this preparation by a formula which would not precipitate in the different preparations in which it is used, and yet contain the full medical virtue of the root, I have succeeded in making a fluid extract which seemingly will overcome the objection made against the present formula, which by a series of experiments I find contains all the emetia, and will keep indefinitely, and mixes readily with syrup, forming a clear preparation, without the dirty or muddy precipitate which is produced when the officinal fluid extract is used, viz.:

Take of

Ipecacuanha in fine powder....48 troy ounces.
Glycerin,
Water.....each a sufficient quantity.

Mix the glycerin and water in equal volumes and having moistened *twenty-four* troy ounces of the powder with eight fluid ounces of the mixture, pack it in a conical percolator, and pour on the mixture until sixteen fluid ounces have passed, and set this portion aside. Continue the percolation with the mixture until thirty-two fluid ounces more of the liquid have been obtained. Moisten *sixteen* troy ounces more of the powder with a portion of the last percolate obtained from the first packing, pack it as before, and pour on the remainder of the last percolate obtained from the first packing, reserve the first twelve fluid ounces of liquid which pass, and continue the percolation with the mixture of glycerin and water until twenty fluid ounces more of percolate are obtained. Moisten the remainder (*eight* troy ounces) of the powder with a portion of the last percolate obtained from the second packing, and proceed as before, until twenty fluid ounces of percolate are obtained; lastly mix all the percolates.

A fluid extract made by this process will represent the powdered root in proportion of about minim for grain.

[After giving an account of the process by which he isolated the emetia, which is here omitted, the author concludes with the following:] During my examinations of the reactions heretofore ascribed to emetia, I found a new one which has not previously been mentioned, so far as I know. If a few drops of hydrochloric acid are poured on a little potassium chlorate in a test tube, and a drop of a solution of emetia is added, an orange-red color changing to violet is produced.

* Abstract of a thesis presented to the College of Pharmacy of the City of New York.

The Chinese in California.—The Chinese Consulate-General, recently established in San Francisco, has informed the British Consul that there are three hundred Chinese doctors in the capital of California, and this estimate is considered too small. In 1878, more than $40,000 worth of drugs and dyes, $33,000 worth of chemicals, and nearly $700,000 worth of opium were imported from China into San Francisco.—*Chem. and Drugg.*

The Suppression of Secret and Proprietary Medicines is reported to be under consideration by the German Imperial Public Health Department. In Switzerland, the sale of secret and patent remedies is also about to be submitted to very stringent regulations.

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EDITORIAL.

IN the last volume issued of the Medical and Surgical History of the War of the Rebellion (Part II., Vol. I.; Medical History), which is from the able pen of Dr. J. J. Woodward, Surgeon U. S. A., and treats of alvine fluxes and their treatment in a most exhaustive manner, we find on page 675 the following foot-note referring to *pepsin:*

"In our own country [*i. e.*, the U. S.], a serious obstacle to the employment of this remedy (*pepsin*) results from the circumstance that so much of the pepsin in the market is quite inert, either on account of defective methods of preparation, or the changes which this substance is so prone to undergo if kept. Acting Assistant Surgeon W. M. Mew reports that, *during the last few years, he has found most of the samples of pepsin offered for sale to the Purveying Department, and examined in the laboratory of the Surgeon-General's office, to be quite inert.** On one occasion, thirteen samples were offered, of which but a single one possessed any activity. The method of examination was to attempt, with proper precautions, the artificial digestion of boiled white of egg with each preparation submitted. A recent article by Oscar Liebreich—'The Uses of Pepsin in Medicine and its Preparations' (*The Practitioner*, Vol. XVIII., 1877, p. 165)—makes a similar statement as to the quality of the commercial pepsin of Europe: 'But these preparations are very far from stable or reliable, and however active some of them may be when perfectly fresh, they do not remain active, and a large portion of the pepsin powders prescribed are absolutely inert.' On this statement, the editor of NEW REMEDIES, Vol. VI., 1877, p. 111, comments that, 'however true Prof. Liebreich's remarks may be regarding the quality of preparations for sale in the German market, they will not hold good on this side of the water. The dry preparations have, we believe, been the ones most largely employed in this country [*i. e.*, the U. S.], and we are not aware that, after several years of trial, their effects have led to want of confidence among those who are capable of being judges.' This extract serves only as an illustration of the loose manner in which opinions as to the therapeutic action of medical preparations are sometimes formed in America, for the experiments of Mew, to which I may add the clinical observations of H. C. Wood—'A Treatise on Therapeutics,' 2d edit., 1876, p. 579—show that the opinion of Liebreich is fully applicable to the preparations sold under the name of pepsin in the U. S. I may add that Liebreich has suggested solution in glycerin as the best method for the preservation of pepsin originally good."

Were it not for the well-earned reputation of the author, and the high respect which we have for his learning, we would hardly deem it worth while to reply to this paragraph, which must have been written under a misconception or from want of a correct knowledge of the facts. In the first place, we have said, not in as many

* The italics are our own.

words, but in substance, that—in 1877—the dry American pepsins were, on the average, more satisfactory preparations than the foreign pepsins. Now, we distinctly repudiate the insinuation of any *loose* manner of forming an opinion, for our statements are founded on facts. One of the editors of this journal, a short time previous to the publication of the article criticised, had occasion, in the ordinary discharge of his official duties, to make a comparative examination of various kinds of pepsin in the market. The public institutions had been in the habit, up to that time, of using a certain brand of pepsin, which was suddenly found fault with, and, in order to obtain another reliable kind, these experiments were undertaken. But he *did not ask for samples* to be submitted to him; on the contrary, he went into the open market, like any private customer, and purchased original average samples. These were all examined by the same method—there were eight samples in all, six American and two foreign—and five American and one of the foreign samples were found to be fully active; the sixth American sample was only partially so, and one foreign sample was completely inert. The test consisted in allowing the pepsin to act upon boiled white of egg (all of one lot) in an acidulated solution. This test alone is only of value, if used for the determination of the *comparative* value of different pepsins; it does not decide absolutely whether any pepsin will dissolve a certain amount of fibrin or albumen, since it is necessary to acidulate the solution with hydrochloric acid, and a dilute solution of the latter alone, without pepsin, will itself gradually disintegrate and partially digest those bodies. Now, while we have full confidence in Dr. Mew's report on the quality of pepsins offered to fill a Government contract, we insist that such samples *do not* represent the market. Surely the officers of the U. S. Army are not so unsophisticated as to believe that the goods *offered* to fill army contracts are always of the average fair quality. It is only fortunate, and the Government is to be congratulated, that there are honest men in charge of the responsible offices, where such fraudulent articles are examined and rejected. But under no circumstances should the statistics of rejection of articles offered in fulfilment of a contract with the Government be made the basis of pronouncing judgment on the quality of goods offered by bona fide dealers in the general market.

Dr. Woodward cites Prof. H. C. Wood as an authority for *his* view, that the opinion of Liebreich is fully applicable to the American pepsins. We shall quote the same authority, who says, *one year later*, on page 1745 of the U. S. Dispensatory, 14th edition: "The U. S. Ph. does not recognize pepsin, although it has been for some years very largely used by the American profession. Much of the pepsin thus employed has been obtained from *Europe*, and has been of various quality, most of it being heavily loaded with starch, and some of it containing little or no pepsin. Several *American* brands have, however, been put upon the market, which appear to equal in quality Boudault's pepsin."

This is exactly in accordance with our experience. We shall refrain from mentioning any names of manufacturers, excepting *one*, whose name must be mentioned when speaking of pepsin. It is principally owing to Prof. E. Scheffer's *disinterestedness* in publishing his excellent process for producing, in a most simple manner, good active pepsin, that many brands of American pepsin are so satisfactory. Of course, long keeping will spoil even the best; and we do not mean to say that there are not any bad or inert American pepsins in the market now. What we particularly desired to lay stress upon, was to assert that it is not our habit to give our opinion on therapeutical subjects "in a loose manner," and that we are fully justified in differing from the opinions of Prof. O. Liebreich, Prof. H. C. Wood, or Dr. J. J. Woodward, whenever we base our statements on personal experience and honest convictions.

While speaking on this subject, we may add the following remarks of Dr. H. Hager (in *Pharm. Centralhalle*, Nov. 13th, 1879) on some German pepsins, which he had occasion to use in connection with other experiments:

"First I used the pepsin made by Fried. Witte, of Rostock, and afterwards that made by Finzelberg, of Andernach on the Rhine. Both of these are excellent preparations in every respect, before which the other pepsins will probably in the course of time disappear. Here I must mention one result of my experience, namely, that the digestive power of many pepsins gradually diminishes, although they be kept in tightly-closed vessels. A few years ago, I had at my disposal eight pepsins of different manufacturers. They were examined, and the digestive value noted on each label. While testing the two pepsins mentioned above, I examined four of these latter samples, which appeared to me to have become darker in color, and I found that some of them retained only a very weak digestive power, while in the others it had entirely disappeared. No doubt, the method of preparation has a great deal to do with this, for Witte's pepsin, although over two years old, was as active as when freshly made. The other brand (Finzelberg's) had retained its full power after nine months, and is likely to remain so even in future."

RECENT PAPERS.

The Art of Dispensing.

THIS paper has been adapted from the *Chemists' and Druggists' Diary*, for which it had been specially prepared. Although many of its suggestions will not be new to some pharmacists, there are others who will find in them much that is valuable and before unfamiliar to them. —ED. N. R.

THE DISPENSING DEPARTMENT.

That section of the shop of a chemist and druggist where prescriptions are dispensed should be, and generally is, the particular pride and study of the proprietor. Whether prescriptions dispensed be a few or many, it always pays well to devote the most careful attention to this department. It is the department by which a chemist and druggist is tested and judged. If he is slovenly or ignorant therein he can have but little chance of reputation elsewhere, unless he choose to aim at the somewhat doubtful glory of counter-doctoring or quack medicine mongering.

The dispensing department should be situated in the part of the shop most remote from the space set apart for customers. Its extent will, of course, be regulated by the requirements of the business, but whether small or large, it should be so fixed that the dispenser will be able to carry on his work without interruption, and without having any of the other assistants pushing behind him.

We may remark, however, that it is very desirable that a fair-sized desk should be at one extremity of the dispensing counter, with the label-drawer and books close by, and an open sink at the other end, provided with a perforated shelf to allow mortars, measures, etc., to drain.

GENERAL SUGGESTIONS.

It is needless to say that the medicines employed in the preparation of prescriptions should be of the finest quality procurable for money. Second qualities of some goods may be necessary for certain purposes in other sales, but the pharmacist should not for a single moment permit the entrance of a thought about second qualities in the dispensing department. Differences will occur in medicines prepared at different establishments, but always, at least, retain the satisfaction of knowing that these cannot result from the use of inferior drugs in *your* pharmacy. Let the question of profit gained from the dispensing of prescriptions be a secondary one. That will take care of itself. Dispense medicine with the feeling that an artist has in his work, and so will you make an art of your work.

The pharmacist, however, may lose all the pecuniary benefit of his conscientiousness if, after using the most costly drugs, he should be wanting in neatness or style in sending them out. The dispenser who economizes on his drugs is a rogue, but he who economizes on his bottles, corks, pill boxes, or paper is a fool. What will the majority of patients think of a man who puts bad corks in green unlipped bottles, and badly-finished pills in cheap boxes, sending out the parcel wrapped in a coarse paper? They have only the externals to judge by, and generally they would be right in concluding that a man who saves in such matters is quite likely to save in regard to the ingredients of the medicines he uses, while the evidence of slovenliness on the outside of a packet does not encourage faith as to the care with which the contents have been combined.

The ability to write neatly is a very important requisite for the dispenser. Bad penmanship is too easily accepted as a sort of natural defect, and a good many people even pride themselves on it. Some perseverance, however, is all that is necessary to make a bad writer into a good one, and the youth who will not take the trouble to cultivate that first branch of his art had better abandon any thought of fitting himself to become a dispenser of medicines.

The prescription-book should contain not only a faithfuly copy of every prescription dispensed, but notes should be recorded in the margin of any difficulties met with in the preparation of the medicines, and of the processes whereby they were overcome. Both prescription-book and prescriptions in course of preparation should be so placed as to be in no danger of injury in case of an accident on the counter.

It is very convenient to have a nest of drawers behind the dispensing counter, with a set of ordinary shop bottles over. The requirements of the dispenser may thus all be within reach. But it is of great importance that poisonous substances should be kept in a locked-up cupboard. The deadliest of these might advantageously be kept in another locked-up cupboard *within* the first.

Never have two prescriptions going at once. Of course, if there is an infusion to make, you will set that on—set the jar on one side, marking on a piece of paper what it is, and hold that label between the cover and the jar. You can then go on with another prescription. But, having finished one, clear up all mess, put away bottles, measures, and mortars, before beginning anything else.

It is desirable that one person should copy the prescription and write the labels and dispense the medicine.

The copying should always precede the dispensing, and the dispenser will then have acquired a general acquaintance with the prescription. If the staff is large enough it is a very good plan for a second person to examine the medicine, compare the labels with the prescription, and finish off. In any case the dispenser should never let his medicine leave him without making a final reading of the prescription, concentrating all his attention on it, and considering whether he has exactly followed the instructions. He may, for example, have used citrate of iron when citrate of iron and quinine was ordered, and he would hardly fail to recognize this oversight if he devoted a few final moments to the work of supervision. He should, last of all, give a final reading to his copy, carefully noting the quantities as well as the substances.

DISTILLED WATER should always be used, since the impurities of tap or spring water give a very different *appearance* to some mixtures. Tinct. lavand. co. gives a bright mixture with distilled, but a muddy one with tap water. Tinct. card. co. produces with distilled water a reddish-brown color; but with tap water a brilliant crimson, as though ammonia had been added.

A sediment in a bottle of medicine, containing liq. arsenicalis and water, will probably be regarded by the nervous patient as the arsenic imperfectly dissolved, it has been previously obtained without such a deposit.

Such prescriptions as the following are constantly seen on the dispensing counter:—

Argent. nit. ..... gr. 5
Aquæ ..... ℥ i.
Mix.

II.

Syr. ferri. iod. ..... ℥ i.
Aquæ ad ..... ℥ iv.
Mix.

III.

Plumbi acet. ..... gr. xij.
Sp. vin. rect. ..... ℥ i.
Aquæ ad ..... ℥ iv.
Mix.

In many cases it is advisable even to boil the distilled water, for if it happen to contain carbonic acid or atmospheric air, decomposition will be accelerated; 1 and 2 are good examples; it may also be remarked that in dispensing the latter the S. V. R. should be diffused through the water before the acetate of lead is dissolved in it. The spirit seems to further the expulsion of the air and carbonic acid gas, which are mostly present if the distilled water is not fresh.

Medicated waters should not be prepared by filtration through magnesia, since this substance is slightly soluble in water, and may be incompatible with other constituents of the mixture.

Filtering or straining mixtures should never be resorted to, except to remove extraneous matter accidentally introduced—a fragment of cork or bit of straw, etc. When a

precipitate or separation of any kind is inevitable, it should be rendered as finely divided and as easily diffusible as possible, and a "shake label" attached.

Fresh infusions should be used whenever practicable; a supply adjusted to the demand should be made each morning, and, where this cannot be done, the cases are rare in which a customer could not send again for the medicine after the infusion has been made, especially if it be impressed on him that the mixture would be better when so prepared. The concentrated infusions may be kept for emergencies, but, if they were as good as freshly-made ones, physicians would prescribe the former, or else tinctures.

ALOES.—When aloes is prescribed without specification of the kind, Socotrine should always be used. When Barbados aloes is required it is always specified.

LABELS.—In labelling shop-bottles, where similarity is approached, the difference should be prominently indicated, *e. g.*, the compound tinctures and powders, the dilute acids, etc., should have a bold "comp." or "dil." on the *front* of the bottle on a second line. Classification of bottles and drawers into groups of tinctures, wines, roots, seeds, barks, potassium salts, sodium salts, etc., each group being arranged alphabetically, is to be recommended as tending towards greatest freedom from error by compelling the dispenser to *read the label*. Nothing involves greater risk than shelves, etc., being divided into such small sections that the dispenser fancies he could find anything in the dark.

"POISON," "Shake the Bottle," and other adventitious labels are best placed at the shoulder of the bottle. If placed at the foot, the hand holding the bottle may cover them, or a hurried person may overlook them. At the shoulder they will be read first.

SOLUTIONS.—When substances are ordered in mixtures in larger quantities than the menstruum will retain in solution, the solids should be rubbed to powder in a mortar with some of the menstruum, cold, and transferred to the bottle, which should have a shake-label. If they are dissolved by the aid of heat, they will be deposited in crystals. By trituration they are finely divided, and easily diffusible by shaking.

Cleanliness of measures, mortars, scales, accuracy of scales, a special pair being kept for the poison cupboard. Every quantity taken from this cupboard should be checked by a person other than the dispenser. Every doubtful reading should be referred to others before being dispensed.

CARELESS PRESCRIBERS.—It would save the pharmacist a great deal of anxiety if prescribers would take the trouble to initial unusual doses, for many instances occur where it is impossible for the dispenser to know whether the dose is safe or not; for instance the dose of potas. iodid. is 2 to 10 grains, yet 20 grains is a frequent dose, and even 1 or 2 drachms twice or three times a day, while some patients experience very unpleasant effects from a single dose of 2 grains. Again, the dose of ext. ergotæ liq. is 10 to 30 minims, although 1 drachm is a very common dose, and in some cases 4 drachms or 1 oz. may be given with impunity.

Another instance.

Pil. coloc. co.....gr. ij.
Pil. cambogiæ co.....gr. i.
Strychniæ.....gr. ¼.
Ext. bellad.....gr. xxiv.

Ft. pil. in arg. Mitte xxiv. Sig. One at bedtime.

Two grs. of ext. bellad. for a dose is unusual, but, since it was for an adult and only exhibited once a day, it might have been dispensed. But the dispenser happened to know that the prescriber gave only *small* doses of belladonna; he was, therefore, consulted, and the dose altered to ¼ of a grain.

The attention of prescribers to another point would be a great boon to pharmacists, viz., *ambiguous nomenclature*. For preparations mentioned in the U. S. Pharmacopœia the name there found should be used, and in ordering those not included in the U. S. P., the initials of the Pharmacopœia, or the name of the standard work in which the formula may be found, should be appended. Otherwise much doubt is involved, thus:—

Ung. plumbi subacetatis
Ung. picis
Liq. arsenici chloridi.

In each case it was known that the prescriber meant by these terms:—

Ung. plumbi acet. B.P.
Ung. picis liquid. B.P.
Liq. arsenici hydrochlor. B.P.

respectively, although in the absence of that knowledge

Ung. plumbi subacet. Co. B.P.
Ung. picis P.L.
Liq. arsenici chlor. P.L.

might have been properly dispensed.

With such prescriptions as these it is no wonder that a patient often tells his country chemist that his medicines are totally different from what were obtained in the "West End."

ERRORS IN THE PRESCRIPTION.—If possible, reference should be made to the writer. Caution must be used in concluding that a *fancied* error or omission is *real*. "Common sense" is frequently appealed to, but this indefinable judge cannot be called into operation unless the "sense of the community" on the point in question has been obtained. Too many people confound their own individual opinion with the dictates of "common sense." For instance, some dispensers invariably add acid to a mixture containing quinine, although solution of the alkaloid is not prescribed. Now, many physicians prefer administering quinine *in suspension*, and it is decidedly less disagreeable taken in this manner, especially when large doses are exhibited.

MIXTURES.

General Rules with Examples.

This class of medicines is generally considered to require so little art in compounding, compared with the difficulty of reconciling a rebellious pill-mass, that certain principles which should be observed in preparing them are often overlooked by dispensers. Nearly all dispensing operations are more or less chemical ones. Dispensing is chemistry applied to the art of pharmacy, but the skill and knowledge of the dispenser are generally most brought into request in letting as little chemical decomposition take place as possible. To such an extent do the disciples of Hahnemann carry this that a strict homœopath, in dosing a patient with aconite and belladonna, will make separate mixtures, containing only one of the tinctures in each, of which the patient must take a dose of one one hour, and of the other the next hour, and so on alternately. The one fundamental rule, therefore, in dispensing a physician's prescription is *to have as little chemical action take place among the ingredients of the formula as possible, unless such is clearly ordered or intended by the prescriber.* A typical mixture is like a quadruped—it has four legs to stand on. According to Pereira these are, the basis, the auxiliary (adjuvans), the correctice (corrigens), and the vehicle (excipiens); but, as of late the tendency has been towards simplicity in prescribing, it frequently gets dismembered into a biped; either the auxiliary or the corrective, and, what is of more importance to the pocket of the pharmacist, the vehicle, are frequently omitted. The mixture is then, in pharmaceutical parlance, called "drops."

To take an example—

Liq. potassæ.....fl. ℥ ss.
Tinct. hyoscyami.....fl. ℥ vi.
Muc. acaciæ.....fl. ℥ ij.
Aq. camphoræ ad.....fl. ℥ viij.

Mix.

The veriest tyro could mix these by simply measuring the ingredients in the order in which they are written, putting them into a bottle and shaking them together; but the faithful dispenser, remembering the above rule, and having knowledge of what Dr. Garrod has proved

respecting the action of caustic fixed alkalies on belladonna and henbane (notwithstanding which they are still frequently prescribed together), will measure the liquor potassæ into the bottle first, and dilute it well with the camphor water, rinsing the measure with it while doing so, and being careful not to "drown the miller" by adding too much; then he will add the tincture of henbane and mucilage; lastly, again rinsing the measure with the vehicle, he will fill up the bottle with it. The modern tendency is, as I have said, to omit the last two and prescribe the first two mixed, with the henbane in an inert condition, and order the patient to take a teaspoonful in home-brewed linseed tea.

To take another example—a bronchitic mixture:—

Ammon. carb.	gr. 60
Syrupi tolutani	fl. ʒ vi.
Tinct. tolutani	fl. ʒ iij.
Vin. ipecac.	fl. ʒ ij.
Sp. chloroform.	fl. ʒ iij.
Inf. senegæ ad	fl. ℥ xij.

Solve et misce.

It is always convenient to take the ingredients of a formula, especially where these are numerous, in the order in which they are written, and use—weigh or measure—them out in this order. It is less tax on the memory to know when you have got so far among them that you have added all previously prescribed to the one being weighed or measured, and the prescriber who has any knowledge of dispensing generally writes them in this order; and, provided it be borne in mind what has been said above, about diluting the first article with some of the vehicle ordered before adding the other ingredients, the order of taking them should, as a rule, be followed, unless there are reasons for not doing so, as this bronchitic mixture will exemplify. We have here a chemical action required—viz., to make a solution of a salt. This should be done by using the watery vehicle as a solvent. Where two or more soluble salts are ordered together in a mixture, not decomposing each other, there is no objection to dissolving them together in the menstruum; in fact, it is often the only quick and practical means of getting them dissolved, as when the quantity of vehicle ordered will make almost a saturated solution of one or both of the salts. In making a solution of carbonate of ammonia in the infusion, in the case before us, a mortar will be required, as the carbonate of ammonia, unless in the state of fine powder—in which condition it is not advisable to keep it—does not dissolve readily enough in aqueous menstrua to enable us to make the solution in a measure-glass with the aid of a glass rod, as might be done with the bicarbonates of potash and soda.

It is much better to avoid the use of a mortar, if possible, in making these solutions, as well as using more glass measures than are absolutely necessary. Practically, a 2-drachm conical minim, and a 5-oz. conical glass-measure are all (unless it be to measure oils) a [British] dispenser requires, and these he should be personally responsible for keeping in a clean, usable condition. For convenience in dispensing, and to avoid using a mortar, where there is enough demand for them, carefully prepared and filtered solutions should be kept of many salts of the strength of 10 grains in a fluid drachm of distilled water, such as carbonate of ammonia, bicarbonate, nitrate, iodide, and bromide of potassium, so that for 60 grains 6 fluid drachms of solution may be used. Solution of chlorate of potassium may be made 20 grains to the fluid ounce.

But these solutions should not be used where their use would rob the mixture of a quantity of vehicle, as in the case under consideration, which is not distilled water. Having got the solution effected by rubbing the carbonate of ammonia with the infusion, it should be strained into the bottle. Some dispensers make their solutions of salts in the bottle, and strain if necessary. It is better to make it a rule always to strain these solution of salts, and strain them *into the bottle*. In straining them *from* the bottle you are apt to leave some mechanical impurity adhering to the side of the bottle, and this remains in the bottle after the liquid has been poured back into it. Having got the solution of carbonate of ammonia in clear condition, say about a couple of ounces of it in the bottle, syrup of tolu comes second on the formula. But this should not be added now, because it would clam up the measure, and we should not be able to measure the other ingredients accurately after it in the same glass, without cleaning it more than necessary for our present purpose. The ipecacuanha wine should be added at this stage, but before doing so, knowing the action which caustic potash has on belladonna and henbane, and not knowing for certain, but presuming that ammonia may have a similar action on ipecacuanha, the solution should be diluted in the bottle with about seven ounces more of the infusion. A word of caution about infusions: When freshly prepared, they should be allowed to become quite cold—cooled by standing the vessel containing them in cold water if necessary, in nearly all cases, before being used for dispensing. It is a common fault with dispensers not to do so, but if used warm in this instance, it will volatize the ammonia, chloroform, and some of the spirit, and cause the resin of tolu to aggregate on the side of the bottle. Having added the ipecacuanha wine, the spirit of chloroform should be measured; to it should be added the tincture of tolu, and these should be thrown, mixed, into the bottle, being careful to let the liquid fall into the middle of the solution in the bottle, and not touch the neck or side; agitate the whole instantly by a little sudden jerking. In this way the resin and chloroform will be equally diffused through the mixture. On adding the spirit of chloroform by itself to such a mixture, without shaking, the chloroform would separate and descend, and on pouring in the tincture of tolu by itself, without shaking, the resin would separate and float on the top. By having the resin of tolu held in solution by the additional quantity of spirit, of the spirit of chloroform, less separation takes place on addition to the mixture. In other words, a better emulsion will be made of the resin than if the tincture had been poured in by itself. The syrup of tolu should now be added quickly, and the measure rinsed with more infusion, sufficient to make the required quantity of mixture. The bottle should be at last slightly—not too much—shaken, or it will have a tendency to make the resin separate on the sides of the bottle. By rinsing the measure a little more, at the top, at once, it will easily become clean and ready to commence work again.

The rule in preparing these mixtures should be, therefore: Make a solution of the salts first, using the vehicle, which is generally aqueous, as a menstruum; strain into the bottle, dilute with more vehicle passed through the strainer, add the tinctures, or spirits, measuring small quantities first, shaking after each addition; then add the syrup, or any mixed preparation ordered; lastly fill up with the vehicle, and shake again.

We have mentioned STRAINING the mixture. Different media are used for this purpose—tow, jute, muslin, lint, cotton wool, glass wool, etc. I do not mean filtering through paper; this is not necessary for mixtures, and not intended; finely-divided resinous substances, essential oils, etc., precipitated from tinctures, on addition to an aqueous vehicle, would be filtered out against the instructions and, probably, wish of the prescriber. Tow is most generally used, and makes a good strainer; only a little should be used—sufficient to plug the neck of the funnel—and a little water should be run through it first to take the dust out of it. Jute treated in the same manner makes a better strainer; it is harsher, and plugs the neck of the funnel better, but it is said to be not so inert a substance as tow, that water has more action on it. Cotton wool makes a good strainer for a small quantity of liquid. If pressed into the neck of a funnel, and a few drops of spirit sprinkled on it first to lessen the repulsion it has for water, then a little distilled water run through it to get rid of the spirit, it makes a strainer almost equal to a paper filter. The absorbent cotton wool does not need this preliminary treatment.

Another example is a mixture containing insoluble salts, with tragacanth to suspend them. The great object in this is to give the patient in each dose of the mixture an equal quantity of each ingredient, having the solids suspended in it with the aid of the gums in the state of fine powder.

Bismuth. subnit.	℥ ij.
Magnes. carb.	℥ i.
Acid. hydrocyan. (Scheele).	♏ vi.
Tr. capsici	♏ x.
Tr. opii	fl. ℥ iss.
Pulv. tragac. co.	℥ iss.
Aq. menth. pip. ad.	fl. ℥ vi.

Mix.

The three powders require rubbing together in a mortar, with some of the vehicle gradually poured in to form a uniform mixture; this should be, without the aid of a funnel, dexterously transferred to the bottle, the liquids added in the bottle, *not the mortar*, as is sometimes done, else loss by evaporation of hydrocyanic acid, spirit of the tinctures, etc., will take place. The mortar should be rinsed with a little more of the vehicle, this poured into the bottle, and the quantity required to fill the bottle added. Levigated subnitrate of bismuth and carbonate of magnesia, had there been no compound tragacanth powder ordered in this formula, would have diffused themselves readily in this mixture, without the use of a mortar being necessary. Where crystalline salts are ordered in a mixture beyond their power of saturating it, they should be reduced to a fine powder previously. Such salts as chlorate of potash, sulphate of potash, gallic acid, and sulphate of quinine are frequently so ordered. Sulphate of quinine requires light trituration in being powdered, care being taken not to allow it to "cake" and adhere to the mortar and pestle.

In many cases there is clearly a chemical action prescribed, or intended, as in the following:—

Potass. bicarb	℥ ij.
Ammon. carb.	℥ ss.
Acid. citrici	℥ ij.
Syrupi	fl. ℥ ss.
Aq. ad.	fl. ℥ vi.

Solve et misce.

Here the prescriber intends a semi-effervescing mixture. After powdering the carbonate of ammonia, the bicarbonate of potash should be added to it in the mortar, then the acid with a little water (but *not the syrup*), the excess of effervescence allowed to pass off and the solution strained, the syrup added *in the bottle*, and the quantity made up and quickly corked. The mixture will have the fresh taste of the little free carbonic acid it contains. In such cases as this it is better to let the chemical action be as intense as possible, provided there be sufficient vehicle present to hold the resulting salt in solution. This applies particularly to sulphate of quinine: in dissolving it in water with the aid of diluted sulphuric acid it quickly crystallizes again in a block of crystals, as the acid sulphate of quinine—difficult to re-dissolve, unless a sufficient quantity of water be present to hold the latter salt in solution.

In making solutions of salts, it has been mentioned that it is better not to dissolve them in the bottle. The "scale" preparations are an exception to this. They can, with care, be readily and easily dissolved in the bottle in which they are to be dispensed. A little of the water or aqueous vehicle should be put into the bottle first, being careful not to wet its neck; or, should this be done, it should be dried with a cloth, else the scale preparation will adhere to this moisture, and block the admission of the salt into the bottle. A solution is readily formed if the salt falls upon the water and is quickly agitated—not allowed to "cake" at the bottom.

The skilled English dispenser makes use of the measure-glass largely in dispensing, and, where it is required to combine quickness with accuracy, the measuring of fluids may be much more definitely effected than by weighing them. Liquor arsenicalis and liquor strychnia can be much more accurately dispensed by measuring 30 minims than by weighing a corresponding quantity, say, into an 8-oz. bottle. According to the French and German method—and this, also, is likely to be adopted in the United States—the dispensing even of liquids is effected by weighing. This has many advantages in a Pharmacopœia, but as the medicines will be *measured, not weighed*, when administered to the patient, this system will not give a very accurate dose of such medicines as chloroform, ether, etc.

MIXTURES: SPECIFIC INSTANCES.

Mixtures containing quinine without an acid solvent are not infrequently a source of a little unpleasantness between dispenser and patient, if the prescription has been made up at several establishments. In such it frequently happens that spirit of chloroform, nitre, or some tincture is ordered in sufficient quantity to effect a solution; if the quinine be mixed with such spirituous preparation and heated in a corked test-tube it will readily dissolve, and by a little judicious manipulation may be kept in solution, and a clear mixture sent out without in any way tampering with the prescription.

Quiniæ sulph.	gr. vi.
Liq. arsenicalis	♏ 40
Acid. sulph. dil.	♏ 30
Aquæ ad.	℥ vi.

Mix.

Here the sulphuric acid not only dissolves the quinine, but also neutralizes the carbonate of potash in the arsenic solution, and forms a small portion of sulphate of potash. This is a matter of no importance, yet the prescription would read better, and show the thoughtfulness of the physician, if the acid solution of arsenic were ordered. Again:—

Quiniæ sulph.	gr. ix.
Acid. sulph. dil.	℥ ij.
Infus. rosæ ad.	℥ viij.

Mix.

The formation of an insoluble tannate of quinine cannot be avoided. Sometimes a druggist, expecting to obtain a perfectly transparent mixture and surprised at the result, is disposed to filter out the tannate of quinine. This, of course, is unjustifiable, as is every other attempt to remove a legitimately-formed precipitate in any mixture, or the addition of any substance to prevent precipitation.

Liq. ferri iodidi	℥ ss.
Syr. ferri hypophosph.	℥ i.
Quiniæ phosph.	℥ ij.
Acid. phosph. dil.	℥ ss.

Mix.

The liquor added to a solution of the quinine in the acid gives a copious finely divided precipitate of quinine iodide, but if the syrup be added *before* the liquor, a clear solution is obtained, from which the iodide of quinine gradually crystallizes; the former method should be adopted.

Quinine frequently forms a troublesome precipitate when resinous or oily bodies are present, and the alkaloid is thrown out by carbonates or hydrates. The best result is usually obtained by diluting, as far as possible, the incompatible solutions *before* mixing. This method answers with the following:—

Tinct. quiniæ	℥ i.
Ammon. carb.	℥ i.
Aq. ad.	℥ xij.

But if the tincture be poured into a strong solution of the carbonate, the alkaloid separates in flocks, which adhere to the sides of the bottle.

Quiniæ sulph.	℥ ij.
Sp. ammon. ar.	℥ vi.
Aq. ad.	℥ vi.

Mix.

Mixed in whatever manner, the precipitated quinine adheres in lumps. A good mixture was, however, obtained by using pure quinine instead of sulphate (allowing 25 per cent for H_2O and H_2SO_4); this was diffused

through a portion of the water, and the diluted sal volatile added.

Quinine Sulphate, with Alkaline Bicarbonates.—When these are ordered together in a prescription, the bicarbonate should be dissolved in the water, and the quinine rubbed to a fine powder and suspended in the liquid.

Ferri et quiniæ cit.	gr. xxxvi.
Sp. ammon. arom.	℥ iij.
Syr. zingiberis.	℥ ij.
Aq. ad.	℥ vi.

Dissolve the ferri-quiniæ cit. in 2 oz. of water, and the other ingredients in the remainder; mix with gentle agitation.

Quiniæ sulph.	gr. xxx.
Potassii iodidi.	gr. xx.
Sp. ammon. ar.	℥ vi.
Sp. æther. nit.	℥ iv.
Tinct. zingib.	℥ iij.
Aq. ad.	℥ vi.

Numerous futile attempts were made to combine this in a presentable manner: the prescriber being near, he was consulted, and direction was given to dispense the iodide and sal volatile in a separate mixture.

Bromide of potassium upsets the equilibrium of ferrum tartaratum.

Ferri tartarati.	℥ i.
Potassii brom.	℥ iij.
Tinct. chlorof. co.	℥ ivss.
Syr. zingib.	℥ vi.
Aq. menthæ pip. ad.	℥ vi.

The "scale" must be dissolved separately in warm peppermint water, otherwise an insoluble coating is formed on its surface, and solution is very much retarded. It is always preferable to dissolve this scale in a little hot water at the time of dispensing, on account of its slow solution in cold.

Ferri. am. cit.	℥ i.
Acid. cit.	℥ i.
Tinct. aurant.	♏ iij.
Syr. aurant.	℥ i.

The solution of the ferri am. cit. is troublesome; it should be dissolved in a test-tube, with a drachm of water, over a spirit lamp.

Ferri et Ammoniæ Citras, with Potassium or Sodium Bicarbonate, in solution, always effervesces. When ordered together in a mixture, the cork should be left out for a time, to allow the carbon dioxide to escape.

Ammon. carb.	℥ ss.
Spir. chlorof.	℥ i.
Inf. gent. co.	℥ vi.

Mix.

If the infusion of gentian be made with plain water, the result will be that the lime mostly present in ordinary water, coming in contact with the ammonia, will render the mixture slightly turbid, and give a lime deposit as carbonate on the sides of the bottle.

Sp. æth. nit.	♏ ss.
Tinct. tolut.	♏ ss.
Tinct. camph. co.	♏ i.

Mix.

If this be mixed up at random, it will generally present different appearances. The principle to be borne in mind here, as in all similar cases, is that it is far easier to keep a substance in solution than it is to take it up again after precipitation. In the instance before us, it is evident that the substances should be mixed in the order of their percentage of alcohol; that is, the nitre should be mixed with the tolu, and the tinct. camph. co. added last, and by degrees, with agitation. This recipe also furnishes another example of the necessity of attending fully to the instructions of the Pharmacopœia, if uniformity in dispensing is to be arrived at. It would matter not how skilfully the chemist manipulated, if his tinct. camph. co. were made with proof spirit, not yet extinct in chemists' shops, made by mixing equal parts of rectified spirit and water, he could not get the bright transparent mixture this prescription should produce.

The same principle and mode of action applies to the oil and potash mixture.

Resinous tinctures (ginger, nux vomica, sumbul, etc.), when dispensed in aqueous solutions, should have a "shake label" attached, especially when acids are present; so also should infusions of cinchona or cascarilla, decoctions of aloes, cinchona, or sarsaparilla, or any preparations *likely* to give a deposit on standing a few days. A patient seeing a sediment is always doubtful whether it should be taken or not, and a "shake label" never does harm even if no precipitate occurs.

Tincture of guaiacum and Indian hemp cannot be dispensed in aqueous mixtures unless mucilage or a similar substance is used. The best modus operandi is to take a measure of muc. acaciæ equal to that of the tincture, dilute it with three measures of water, mix well, pour in the tincture, and gently agitate. Some extracts form a good substitute for mucilage thus:—

Tinct. cannabis.	℥ iv.
Tinct. digitalis.	℥ i.
Ext. taraxaci.	℥ iv.
Ammon. chlor.	℥ iv.
Aq. chlorof. ad.	℥ vi.

Rub the extract down with about 2 oz. of the water, pour in the mixed tinctures, nearly fill the bottle with aq. chlorof., and add the ammon. chlor.

Testing of Beeswax.—F. BECKER recommends the following process, based upon Kœttsdorfer's method for discovering foreign fats in butter:

Into a small flask of about 150 cc. (5 fl. oz.) capacity, introduce about 2 grams of beeswax and 25 cc. of alcoholic solution of potassa, and close it with a rubber-cork provided with a safety-tube, having two bulbs and charged with a sufficient quantity of mercury. Place the apparatus on a water-bath, heat the water to a gentle boil, shake the flask repeatedly after the wax is melted, then let it stand quietly for about 30 minutes. Remove the flask, add 50 cc. of absolute alcohol, and, after adding phenolphthalein as indicator, ascertain the amount of unsaponified potassa by titration. Should any fresh separation occur during this process, the flask is reheated for a few minutes on the water-bath.

According to the author, 1 gram of wax neutralizes or saponifies 97 to 107 milligrams (0.097–0.107 gram) of potassium hydrate (KOH). The usual adulterants of wax, however, behave as follows: Ceresin and paraffine do not neutralize any potassa at all; 1 gram of tallow neutralizes 196 milligrams, 1 gram of rosin 194 milligrams, and 1 gram of Japan wax, 222 milligrams of potassa.—*Correspondenzbl. d. Ver. anal. Chem.*, 1879, 57.

Oxalic Acid as a Solvent for Ozone.—JEREMIN, of St. Petersburg, is reported (by Prof. Beilstein) to have found that ozone is dissolved to a considerable extent in a solution of oxalic acid, and that such a solution may be preserved indefinitely. Subsequent experiments, conducted by Prof. Rud. Boettger, however, did not appear to confirm this statement. Nevertheless, the last mentioned chemist found that a solution of oxalic acid is a much better liquid than water for partially covering phosphorus in generating ozone; at the same time, however, he noticed the production of hydrogen peroxide.—*Pharm. Centralh.*, No. 45.

Cayaponin.—The alkaloid of *Cayaponia globulosa*, a cucurbitaceous plant of Brazil, is a powerful purgative in doses of 6 milligrams ($\frac{1}{10}$ grain) without causing griping.—*Rép. de Ph.*, and *Ph. Zeit. f. Russl.*

General Method for the Separation and Determination of Alkaloids.—A. LOSCH proposes the following new general method for the elimination of alkaloids from vegetable substances.

A weighed quantity of the finely cut or coarsely powdered substance is heated twice on the water-bath with 90% alcohol acidulated with hydrochloric acid, each time for three hours. The dregs are pressed and washed with 90% alcohol. All the liquids are then united, about $\frac{2}{3}$ of the alcohol is distilled off, the cooled residue filtered, the filter washed with alcohol, and the filtrate evaporated to the consistence of an extract. This is now warmed with a quantity of very dilute sulphuric acid amounting to twice the weight of the original substance, then allowed to become *completely* cold and filtered. The filtrate is mixed with three times its volume of a solution of alum saturated at ordinary temperature, and warmed. Ammonia is now added in slight excess, that is, a little more than is required to precipitate the alumina and the alkaloids; the whole is dried on the water-bath, and rubbed to powder.

The powdered residue is now extracted with different solvents: first with ether, then with chloroform, amylic alcohol, and 90% alcohol. These solvents not only extract all the alkaloids present, but in many cases, when several are present at the same time, they may be obtained separately (or nearly so) from each other.

One advantage of this method is the fact that the alumina binds the coloring matter of the drug so thoroughly that the alkaloids are obtained pure and colorless.

The author points out that, in order to obtain the whole of the alkaloids in a pure state, the following conditions must be strictly fulfilled. 1. To *completely* remove the alcohol from the alcoholic extract by evaporation. 2. To filter the alcoholic as well as the aqueous solution only when *cold*.

The experiments of the author have shown him that amylic alcohol is the best solvent of the largest number of alkaloids; then follow ether and chloroform, and finally benzin [petroleum-benzin], which latter dissolves alkaloids but sparingly, excepting a few.—*Pharm. Zeit. f. Russl.*, No. 18.

Paraffin as an Absorbent of Volatile Vapors during Evaporation.—C. LIEBERMANN has found that volatile liquids, such as carbon disulphide, ether, chloroform, and benzol, may be volatilized quite rapidly at ordinary temperature, if the capsule containing the solution is placed, in an exsiccating apparatus, over a basin containing paraffin of every low melting point, best of crude paraffin. The latter greedily absorbs the vapors and dissolves in the absorbed liquid. Crude paraffin can absorb 3 times its own weight of carbon disulphide, and twice its weight of ether. Comparative trials showed that it absorbed its own weight

of carbon disulphide in.....4–5 hours.
" ether " .....8–9 "
" chloroform " .....9–11 "

With benzol the absorption is slower.—*Ber. d. Deutsch. Chem. Ges.*

Detection of minute Quantities of Water in Alcohol.—PROF. H. G. DEBRUNNER finds that strictly absolute alcohol does not dissolve permanganate of potassium, so that the alcohol remains perfectly colorless. A single drop of water, however, added to 10 cc. of absolute alcohol, will at once produce the partial solution of small crystals of the salt. The test is simply made by placing ab. 4 cc. of alcohol into a test-tube and adding a crystal of the permanganate, when—if water is present—the coloration is shown at once. For comparison, the test-tube is held on a sheet of white paper. A chemical reaction—oxidation of the alcohol—occurs, but is much slower in the dark than when exposed to light.—*Am. Journ. Pharm.*, Sept., 446.

Analysis of Eriodictyon Californicum.—MR. CHARLES MOHR presented a paper at the late meeting of the Amer. Pharm. Assoc., held at Indianapolis, in which he reported his analytical results on *Eriodictyon Californicum*. He found in 100 parts:

Volatile oil.....small amount
Moisture.....12.50
Matter soluble in ether.....14.98

consisting of bitter, acrid, brittle resin, 8%; inert green coloring matter, caoutchouc, wax, and tannin in small quantity.

Matter soluble in alcohol.....10.79

consisting of inert resinous matter decolorized by animal charcoal, a peculiar glucoside of the tannic acid series predominating in the mass.

Matter soluble in water.....18.42

consisting of same tannin as above mentioned, gum, inert brown extractive, trace of sugar.

Woody fibre and ash.....43.31.

—*Amer. Journ. Pharm.*, Nov., 545.

Menthol as Antiseptic.—(DR. H. HAGER.) Japanese or Chinese oil of peppermint contains a large amount of stearopten (menthol), so that it forms a solid mass at ordinary temperature. This solid portion of oil of peppermint is likely to become an article much in demand, for, according to Duncan's statements, it has antiseptic powers equal to those of thymol. In some wholesale German price-lists it is quoted as Oleum Menthæ Japonicum crystallisatum, price 62 marks (nearly $16.00) the kilo.—*Pharm. Centralh.*, 394.

New Delicate Test for Magnesium.—MR. SCHLAGDENHAUFFEN finds hypoiodite of sodium or potassium to be an exceedingly delicate test for magnesium even in presence of calcium, barium, and strontium. The reagent is prepared by dissolving iodine in a 2 per-cent solution of caustic potassa or soda, until the liquid assumes a handsome golden-yellow color. This will produce a copious brown-red precipitate, in solutions containing magnesia or magnesium chloride [or other salts of magn.?], to the amount of only $\frac{1}{1000}$ per cent. In more dilute solutions, the reagent produces a reddish color. After standing some time, the brown precipitate or color disappears again gradually, owing to the alkaline nature of the reagent.—*Ph. Centralh.* and *Chem. Centrabl.*, No. 36.

New Test for Calcium.—According to SONSTADT the most delicate test for calcium, even more so than oxalic acid, is sodium tungstate, which must, however, only be added in very small quantity at a time, as calcium tungstate would be slightly redissolved by an excess of sodium tungstate.—*Zeitsch. d. Oesterr. Ap. Ver.*, No. 30.

Detection of Phosphorus.—DR. H. HAGER declares the following method, which, however, is not altogether new, to be the most delicate test for the presence of phosphorus. Mix the substance in question, whether it be food, beverage, excrements or urine, contents of stomach, etc., with basic acetate of lead, in order to remove any sulphuretted hydrogen which might be present. Then take any desired portion of this mixture, add a little ordinary ether, and shake it thoroughly in a glass-vessel. Close it by means of a cork, into the lower surface of which the two ends of a strip of parchment-paper are fastened in the shape of a U, and the bent of which is moistened with solution of silver nitrate. Then set the vessel in a dark or shady place. In a few minutes, or, if only traces of phosphorus are present, in about half an hour, that portion of the paper which was moistened with the silver solution will assume a shining black metallic lustre. This reaction will prove the presence of phosphorus even in such cases where all other known tests fail.

As there are a number of other organic substances which might turn silver-paper brown, it is important to observe that *no heat* is applied during the before-described test: the phosphorus being carried to the paper by means of the ether vapor. Under the same circumstances other substances cannot be confounded with it.—*Pharm. Centralh.*, No. 38.

Distinction between Benzin and Benzol.—The following comparative table of characteristic properties constructed by MR. ALF. H. ALLEN may serve as an addition to the remarks made by us in an article on this subject on p. 271 of our preceding volume.

Petroleum Spirit, "benzoline," or "benzine."

1. Consists of *heptane*, C_7H_{16}, and its homologues.
2. Heptane contains 84.0 per cent of carbon.
3. Burns with a somewhat smoky flame.
4. Commences to boil at 54° to 60° C.
5. Specific gravity about .69 to .72.
6. Smells of petroleum.
7. Dissolves iodine, forming a solution of a raspberry-red color.
8. Does not sensibly dissolve pitch, and is scarcely colored by it, even on prolonged contact.
9. When shaken in the cold with one-third of its volume of fused crystals of absolute carbolic acid, the latter remains undissolved.
10. Requires two volumes of absolute alcohol, or four or five volumes of methylated spirit of .828 specific gravity for complete solution at the ordinary temperature.

Coal-Tar Naphtha, or "benzol."

1. Consists of *benzine*, C_6H_6, and its homologues.
2. Contains 92.3 per cent of carbon.
3. Burns with a very smoky flame.
4. Commences to boil at about 80° C.
5. Specific gravity about .88.
6. Smells of coal-tar.
7. Dissolves iodine, forming a liquid having the color of a solution of potassium permanganate.
8. Readily dissolves pitch, forming a deep-brown solution.
9. Miscible with absolute carbolic acid in all proportions.
10. Miscible with absolute alcohol in all proportions. Forms a homogeneous liquid with an equal measure of methylated spirit of .828 specific gravity.—*The Analyst*, No. 43.

Syrup of Lactophosphate of Calcium.—MR. JOHN W. WATTS, of Baltimore, favors us with a communication regarding his formula for Syrup of Lactophosphate of Calcium, which is quoted in a paper on this subject by Mr. Edward S. Kelly, of Boston, printed in our last November number, page 325. He points out that in his original paper (*Am. Journ. Pharm.*, Feb., 1876), the quantity of hydrochloric acid is left blank, and merely indicated by q. s. He states there, however, subsequently that six *drachms* are sufficient to keep the phosphates in solution, although a smaller quantity may answer, if the syrup is to be kept less than about 2 or 3 months. The "℥ vi." in the formula given by Mr. Kelly should therefore be corrected to ʒ vi.—ED. N. R.

New Preserving Fluid.—The Prussian Secretary of State for Education has caused the publication of the following compound, and method of its application, discovered by Wickersheimer, the preparator of the anatomical museum of the University at Berlin, who had at first patented the compound, but was induced to renounce his patent claims.

1. *Liquid.* In 3000 parts of boiling water dissolve 100 of alum, 25 of sodium chloride, 12 of potassium nitrate, 60 of potassa, and 10 of arsenious acid. Let cool and filter. To every 10 litres of the filtrate, add 4 litres of glycerin, and 1 litre of methylic alcohol.

2. *Use.* Its application differs with the special objects to be preserved. In general, the objects must be impregnated with it. If the objects are to be preserved dry, they are soaked in the liquid from 6 to 12 days, and afterwards dried in the air. Ligaments, muscles, and other animal objects remain perfectly soft and movable. Hollow organs, as lungs, intestines, should be filled with the liquid, previous to immersion in it. After being taken out, and before drying, it is advisable to inflate them with air. Injecting the liquid into a corpse, will preserve the latter completely, and the muscular tissues will always retain the natural color of fresh corpses. To preserve the external appearance of the latter, they should be well impregnated externally, and inclosed in air-tight cases. This is only necessary to preserve the exact original appearance; if it is not done, the body will keep equally well, if thoroughly injected, but the exterior will gradually become somewhat dry and dark-colored. Plants may likewise be preserved by this liquid.—*Das Ausland.*

The Purity of Chloroform.—(J. REGNAULD.) It being very important that chloroform for anæsthetical purposes should be pure, the following simple tests are recommended by the author. If chloroform is dropped on paper and allowed to evaporate, the last portion on being inhaled has a characteristic pleasant smell, and leaves the paper perfectly dry and odorless; impure chloroform, however, possesses a disagreeable irritating odor, which it imparts to the paper.

Pure chloroform does not redden blue litmus or give even a cloudiness with silver nitrate. If it should do either, it contains hydrochloric acid or products of decomposition of some other chlorides. Pure chloroform remains perfectly colorless when boiled with potassa; the presence of aldehyde causes a brown coloration.

When shaken with concentrated sulphuric acid and allowed to stand for half an hour, the two liquids should separate into two colorless layers. The presence of alcoholic chlorides produces a brown coloration.

The purity of chloroform may be judged by its constant boiling point, 60.8°. Impure chloroform may boil above or below, according to the impurities it contains.

The sp. gr. of chloroform can hardly be used as a criterion of its purity, since its determination has been attended with conflicting results. Liebig has found the sp. gr. of pure chloroform to be 1.48 at 18°. Subeiran has shown that this number is too low, the sp. gr. at 12° being 1.496. Again Rémys points out that the sp. gr. of pure chloroform is 1.5 at 15°, and moreover the presence of $\frac{1}{500}$ of alcohol lowers the sp. gr. .002.

The purity of chloroform may to a certain extent be judged by the complete insolubility of Hoffman's violet in it; if it contains a trace of alcohol, the solution is colored a beautiful purple.—*Journ. de Pharm.*, and *Journ. Chem. Soc.*

Oil of Rosemary.—(BRUYLANTS.) The quantity of essential oil yielded by the plant *Rosmarinus officinalis* L. depends on the latitude in which it is grown; that from the neighborhood of Paris yielding only 1.4 to 1.6 grams per kilo, whilst that grown in the south of France yields 3 grams per kilo. When freshly prepared it is a colorless liquid; but on keeping it darkens in color and becomes thick; it is miscible in all proportions with alcohol of 85 per cent. It smells strongly of rosemary, its taste is hot and camphorous; its spr. gr. at 12° is 0.885; it turns the plane of polarization to the left. It begins to boil at 150° C., and the temperature gradually rises to 200°, where it remains stationary a short time, and finally rises to 260°. By fractional distillation it may be separated into three portions, boiling from 150° to 180°, from 180 to 210°, and from 210° to 260°, namely:

A hydrocarbon, lævogyre, $C_{10}H_{10}$, 80 per cent.

A borneol camphor, $C_{10}H_{18}O$, 4 to 5 per cent.

A camphor, $C_{10}H_{16}O$, 6 to 8 per cent.—*Journ. de Pharm.* [4] 29, 508.

What might have been a Fatal Mistake.—At a sale in London, during the early part of October, a number of small gourds of *curare* were exposed for sale, and labeled *aloes!* They were tasted by several people, who, fortunately, owing to its bitterness, probably ejected their saliva immediately afterwards, for had the mucous membrane of the mouth been in any case abraded, the consequences must have been disastrous. As soon as the true nature of the drug was known it was withdrawn from the sale.—*Pharm. Journ. and Trans.*

BIBLIOGRAPHY.

FIRST BOOK IN QUALITATIVE CHEMISTRY. By ALBERT B. PRESCOTT, Fellow of the Chemical Society of London, etc., Professor of Applied Chemistry in the University of Michigan. 8vo. New York: D. Van Nostrand, Publisher, 23 Murray street, 1879. $1.50.

WE have reason to suppose that a book bearing the name of Prof. Prescott as author on its title-page will always be found interesting and useful. This supposition is fully borne out, in the present case, by a careful examination of this handy little book, which is particularly intended for those who do not propose to become professional analysts, but wish to acquire sufficient analytical knowledge to examine materials of every-day occurrence. Some analysts hold the opinion that it is a mistaken policy to countenance anything but a *complete* course of qualitative analysis, claiming that the student who disregards the rarer elements often meets with reactions which remain a puzzle to him, and the non-acquaintance with which prevents him from recognizing minute quantities of impurities contained in the substances he examines. We do not consider this argument convincing. Any course of qualitative analysis, including the present one of Prof. Prescott, will enable the student to recognize, besides the more usual elements, even *traces* of those rarer ones which are important in a medical, toxicological, or sanitary view. To insist that substances like didymium, cæsium, thallium, and other rare bodies should be provided for in the *systematic* course of analysis intended for *beginners* is unwise. We make these remarks here, because we wish to put ourselves on record as being at variance with those teachers of chemistry who do not approve of anything but a "complete" course. It is our firm conviction that a thorough study of a book like this of Prof. Prescott will be of the greatest usefulness to the student. After mastering its contents, he will be much better prepared to enter upon a more complete course, such as is laid down in the works of Fresenius, Rose, and others.

HYGIENE AND MEDICAL REPORTS BY MEDICAL OFFICERS of the U. S. Navy. Prepared for Publication under the Direction of the Surgeon General of the Navy. By JOSEPH B. PARKER, A.M., M.D., Surgeon U. S. Navy, Assistant to the Bureau of Medicine and Surgery. Washington: Government Printing Office. 1879, 8vo, pp. 1079.

SINCE the Bureau of Medicine and Surgery commenced to publish papers by its medical officers it would appear, from the size to which the annual report has reached, that increased interest in scientific work has been awakened among them. The statement of the late Surgeon General, that during the years 1876, '77, '78 the service had suffered a loss of nearly 46 per 1,000 by death and surveys, may also have stimulated an increase in the attention given to the subject of hygiene.

The present volume contains seventy separate reports and essays—too many to enumerate in a brief notice, and covering too much ground to permit of even a cursory review. Forty-seven of these are medical reports which, owing to their eminently practical nature and the suggestions which they contain, as a result of experience derived in nearly all the oceans and ports of the world, are extremely valuable. The balance consist of papers on special topics, such as the hygiene of ship-board, accounts of yellow-fever epidemics in various stations, leprosy, plague, popliteal aneurism, chorea, fracture of the skull, Turkish hospitals, Madeira as a sanitarium, transportation of the sick and wounded, vaccination in Japan, statistics from the fifth general census of Chili, the navigation of the Amazon hygienically considered, etc. Portions of the work are handsomely illustrated, and the whole is extremely creditable to the Naval Service.

Συνταγολογία, ἤτοι: Περὶ τῆς καθ' ἐπιστήμην ἀναγραφῆς καὶ ἐκτελέσεως τῶν συνταγῶν. Ὑπὸ Γεωργίου Ν. Ζαβιτσάνου. 8° *Ἀθήνησι* 1879, pp. 248.

"Syntagology; or, On the Art of Writing and Preparing Prescriptions. By George N. Zavitsanos."

THE author, who is Professor of Pharmaceutical Chemistry and of Receptology at the University of Athens, studied pharmacy in Paris, being a "pharmacist of the first class of the High-school of Pharmacy of Paris," and is a member of several pharmaceutical societies. The work is a good exposition of the art of writing prescriptions, and among other useful things contains a chapter on incompatibilities (p. 31–43), which gives a great number of practical hints. However, there are occasionally statements met with which we cannot agree to. For instance, we would like to know the author's reason for saying of *Κώνειον* (p. 37):

"Conium. Acids diminish the effect of conium. Preparations which contain conium as a basis are more drastic if they have been prepared with a moderate heat."

UEBER DIE BEZIEHUNGEN ZWISCHEN CHEMISCHEN BESTANDTHEILEN UND BOTANISCHEN EIGENTHUEMLICHKEITEN DER PFLANZEN. Von G. DRAGENDORFF. Received from Prof. Dragendorff, of Dorpat.

ANNUAL REPORT OF THE COMMISSIONER OF AGRICULTURE for the year 1878. Washington: Government Printing Office. 1879, 8vo, pp. 608. Pub. Doc.

THIS is one of the most interesting of the reports issued from this department, and is profusely illustrated with woodcuts and lithographic colored plates. The latter especially relate to an extensive report on the "Diseases of Swine and other Animals," embracing a description of the "swine-plague," so prevalent in the West at present. The report of the Chemist, Mr. Peter Collier, and of the Botanist, Mr. Geo. Vasey, are of unusual interest, owing to the extended analyses which have been made of grasses and forage plants. Among the other papers are an interesting description of the Cork Tree and its cultivation; Tobacco cultivation; the Dried Fruit Trade; Agriculture and Soils of California, etc. The report of the Entomologist contains also much interesting material. Other short papers on numerous subjects add to the value of the volume.

A SYSTEM OF MIDWIFERY, Including the Diseases of Pregnancy and the Puerperal State. By WILLIAM LEISHMAN, M.D., etc. Third American Edition. Revised by the author, with additions by John S. PARRY. With 205 illustrations. Philadelphia: Henry C. Lea. 1879, 8vo, pp. 732.

FEW works on this subject have met with as great a demand as this one appears to have. To judge by the frequency with which its author's views are quoted, and its statements referred to in obstetrical literature, one would judge that there are few physicians devoting much attention to obstetrics who are without it. The author is evidently a man of ripe experience and conservative views, and in no branch of medicine are these more valuable than in this. In a very cursory review we notice no very notable changes from the earlier edition.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES. By FREEMAN J. BUMSTEAD, M.D., LL.D., etc. Fourth Edition, Revised and Enlarged, and in Great Part Rewritten by the Author and by ROBERT W. TAYLOR, A.M., M.D., etc. With 138 woodcuts. Philadelphia: Henry C. Lea. 1879, 8vo, pp. 835.

NO work upon this subject has had or merited a more favorable reception than the one of Dr. Bumstead, and it will be a pleasure to those who require such a practical guide to know that in this last work of his life, just closed, he has labored successfully to bring the treatise up to the requirements of the time. As regards the total quantity of matter, the book has been increased by half, while every chapter has been in great part rewritten, and new ones have been added.

A TEXT-BOOK OF PHYSIOLOGY. By M. FOSTER, M.A., M.D., F.R.S., etc., with illustrations. Third Edition, Revised. London: Macmillan & Co. 1879, 8vo, pp. 220. $3.50.

THIS work, since its first appearance, has continued to be one of the most satisfactory text-books on the subject that we have met with, and is in many respects peculiarly adapted for the use of practitioners. No attempt is made, as in many works on physiology, to include the anatomy of the various organs, but the student is referred, for this, to other works. Since the publication of the first edition, a number of rather essential illustrations have been inserted, and in this one particularly the principal changes relate to the chapters on muscle and nerve—subjects in which greatest progress has of late years been made. Those whose knowledge of the functions of organs was chiefly acquired a decade ago, and who have not since been diligent students of the subject, can little appreciate what advances have been made, and can do nothing better than to give Dr. Foster's work some careful reading.

A TREATISE ON THE THEORY AND PRACTICE OF MEDICINE. By JOHN SYER BRISTOWE, M.D. London. Second American edition. Revised by the author, with notes and additions by JAMES H. HUTCHINSON, M.D. Philadelphia: Henry C. Lea. 1879, 8vo, pp. 1,081.

THE first edition of this work, published here in 1876, was well received, and has been largely used as a text-book. The author states that in the preparation of this second edition he has taken much pains, rewriting and cutting out matter wherever it would seem to be needed. Among the principal additions is a chapter on Insanity, in which respect the work varies notably from many treatises on general medicine.

The popularity of the work depends, no doubt, upon the clear and incisive way in which it is written, and the attention to details likely to occur in practice, rather than the discussion of questions of theory. In matters relating to treatment, the author has intentionally refrained from giving more than an outline which should govern the practitioner, as he believes that the selection of the desirable form of remedy and its combinations can only be learned by experience in each case.

AMERICAN HEALTH PRIMERS. Philadelphia: Lindsay & Blakiston. 1879.

SINCE our notice of this series, we have received the following: "THE SUMMER AND ITS DISEASES," by JAMES C. WILSON, M.D.; "THE THROAT AND VOICE," by J. SOLIS COHEN, M.D.; and "EYE-SIGHT AND HOW TO CARE FOR IT," by GEO. C. HARLAN, M.D. These are all extremely valuable and handy manuals, and worthy of very general circulation. We should think that a counter-rack with a supply of this series would be a valuable addition to the stocks of retail pharmacists who have an interest in promoting the welfare of their patrons, and are affected with no business scruples against selling information which, to a certain extent, will obviate the necessity for purchasing medicines.

HYGIENE OF THE VOICE; Its Physiology and Anatomy. By GHISLANI DURANT, M.D., PH.D. A New and Revised Edition. New York: Cassell, Petter, Galpin & Co. 1879, sm. 8vo, pp. 189.

A FORMER edition of this work was received with much favor, and the author has been led to enlarge it to its present dimensions. It is especially adapted for non-professional readers, and will be found by them to contain much valuable as well as interesting information, not only as regards the voice itself and the organ which produces it, but likewise the mechanism of speech and a description of some of the diseases affecting the vocal apparatus and its appendages.

TRANSACTIONS OF THE THIRTY-FOURTH ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY. Held at Dayton, June 3d, 4th, and 5th, 1879. Columbus, O., 1879, 8vo, pp. 219.

THE papers contained in this report relate to "State Government and the Medical Organization," by the retiring president, B. B. Leonard; "On the Treatment of the Various Forms of Consumption," by Roberts Bartholow; "The Preservation of Good Eye-Sight and the Use of Spectacles," by J. H. Buckner; "Report on the Progress of Surgery," by S. F. Forbes; "Report on Hog-Cholera," by D. N. Kinsman; "Mixed Anæsthesia," by J. C. Reeve; "On the Use of the Plaster-of-Paris Roller in the Treatment of Club-Foot," by P. S. Conner; "Tubercle," by H. J. Herrick; "Sanitary Laws," by Geo. E. Walton; "Glaucoma," by S. C. Ayres; "The Metric System," by J. F. Baldwin; "Report of the Committee on Benevolent Institutions," by H. J. Herrick, etc.

THE PHYSICIAN'S VISITING LIST for 1880 (twenty-ninth year of its publication). Philadelphia: Lindsay & Blakiston. Morocco, Tuck.

WE are late in announcing the publication of this standard list, which has been some weeks in the market and should already be found on the counters of all booksellers and apothecaries in towns of any considerable size. Its features are already so familiar that no comment on them is needed.

THE CHEMISTS' AND DRUGGISTS' DIARY FOR 1880.

THE reappearance of this handy appendage to the pharmacist's desk is always welcome even on this side of the Atlantic, for although much of the matter in the text is of a nature which chiefly concerns British readers, there are also many things of more general interest. Among the latter we may mention the Treatise on the Art of Dispensing which this edition contains and which nearly covers thirteen pages. It alone is worth the cost of the Diary to subscribers. Another feature of interest is a map of London, on which is indicated the location of many of the dealers in drugs and other goods in which the trade is interested.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH RELATIVE TO LUNATIC ASYLUMS. Transmitted to the Legislature, May 22d, 1879. Albany, 1879, 8vo, pp. 51. Pub. Doc.

THIS committee was appointed to consider a petition presented to the Legislature at its last session, and having invited the presence of many of the petitioners and of the superintendents of the asylums and others, the report contains the evidence submitted and the conclusions at which the Commissioners arrived.

INFANT-FEEDING and its Influence on Life; or, the Causes and Prevention of Infant Mortality. By C. H. F. ROUTH, M.D., M.R.C.P.L., etc. Third Edition. New York: William Wood & Co., 27 Great Jones St. 1879, 8vo, pp. 270.

DISEASES OF WOMEN. By LAWSON TAIT, F.R.C.S., etc. New York: William Wood & Co., 27 Great Jones St. 1879, 8vo, pp. 192.

BOTH the above works are already well known. They are issued in the present form as parts of the "Wood's Library of Standard Medical Authors," and are thereby placed within the reach of a large number who might be unable to possess them in their original form. No comment is needed regarding their value as authorities.

THE MULTUM IN PARVO PHYSICIANS' LEDGER. By C. HENRI LEONARD. Detroit. $2.50.

THERE are certain peculiarities in a system of accounts adapted for physicians, which render ordinary forms of book-keeping extremely laborious and unsatisfactory, when it is considered that the physician is usually his own accountant, and that he is not apt to do the work in the methodical way essential in commercial houses. This book of Dr. Leonard's, being designed by a physician, has many features which suit it to the wants of this class, and enables the work to be done accurately with the least expenditure of time and labor, and is a complete ledger for 400 patients yearly, for three years. It is designed to accompany the physician's Day Book by the same publisher.

THE AMERICAN BOOKSELLER FOR CHRISTMAS, 1879. The American News Co. New York. 8vo, pp. 164.

THE elegant Christmas number of this convenient trade-journal is worthy of special notice, owing to the unusual size, the multitude of choice specimen illustrations, and the special attention given to the description of handsome books and editions.

MEDICINAL PLANTS, Being Descriptions with Original Figures of the Principal Plants Employed in Medicine, and an account of their Properties and Uses. By ROBERT BENTLEY, F.L.S., etc., and HENRY TRIMEN, M.D., F.L.S., Philadelphia: Lindsay & Blakiston, 1878. $2.00 per part.

THIS very valuable publication is reaching its final numbers. Parts 37 and 38, which have recently come to hand, contain illustrations and letter-press relative to the following: 103. *Rosa canina; Æthusa Cynapium*, or Fool's Parsley; *Humulus Lupulus*, or Hop; *Crocus sativus*, or Saffron; *Smilax officinalis*, or Jamaica sarsaparilla; *Smilax medica*, or Mexican sarsaparilla; *Lycopodium clavatum*, or Club Moss; *Pimpinella Anisum*, or Anise; *Peucedanum graveolens*, or Dill; *Spigelia marilandica*, or Maryland Pink-root; *Cinnamomum Cassia*, or Chinese Cinnamon; *Pinus Pinaster*, or Maritime Pine, and *Pinus Picea*, or Norway Spruce.

NEW BOOKS.

Hamm (Wilhelm v.). Der Fieberheilbaum oder Blaugummi-Baum (Eucalyptus globulus), etc. 2d Ed. Illust. 8vo. Wien. 1 mark 20 d.

Weidel (H.). Ueber das Berberin. Wien. 8vo, pp. 13. 25 pfenn.

Schmidt (Dr. Ernest). Ausführliches Lehrbuch der Pharmaceutischen Chemie. (In 2 vols.) Vol. 1, Anorganische Chemie: 1. Metalloide. 8vo. Braunschweig. 1879. $3.00.

[An excellent and most useful work.—ED. N. R.]

Knebusch (Dr. Theod.). Die allgemeine u. specielle Receptirkunde f. Studirende u. practische Aerzte. 8vo. Stuttgart. 1 m. 60 d.

Neisser (Dr. Alb.). Für die Praxis wichtige Magistral-Formeln. 1. Hautkrankheiten und Syphilis. Leipzig. 16mo, pp. 14. 20 pfenn.

Schneider (F. C.) und **Vogl** (Aug.). Commentar zur Oesterreichischen Pharmacopoe. 150 Illustr. 1. Pharmacognostischer Theil, von A. Vogl. Part 1. Wien, 1879. 8vo, pp. 160. 3 marks 60 d. (In numbers.)

Hoppe-Seiler (F.). Physiologische Chemie. Vol. III. Blut, Respiration, Lymphe, Chylus. 8vo. $1.10.

Elsner (Dr. Fr.). Leitfaden zur Vorbereitung auf d. Deutsche Apotheker-Gehülfen-Prüfung. 8vo, illustr. Berlin. 8 marks.

Hanausek (Prof. Eduard). Kurze Darlegung der wichtigsten anatomischen, physikalischen u. chemischen Verhältnisse der Pfanzenkörper. Illustr., 8vo. Wien, 1879. $0.85.

Church (A. H.). The Laboratory Guide. A Manual on Practical Chemistry for Colleges and Schools. Specially arranged for agricultural students. 8vo. London. 4th edition. 6/6.

Mills (Edmud J.). Destructive Distillation. A Manualetto of the Paraffin, Coal-Tar, Rosin Oil, Petroleum and kindred Industries. 8vo. London. 2/6.

Frankland (Prof. E.). Experimental Researches in Pure, Applied and Physical Chemistry. 8vo. London, pp. 1090. £1 11/6.

Prollius (F.). Der Französisch-sprechende Pharmaceut. Sammlung der französischen Bezeichnungen für alle häufiger vork. Droguen, Geräthschaften, Arbeiten u. Vorgänge, etc. 2d ed. Lüneburg.

Bœttger (Dr.). Der Militär-Pharmaceut. Zusammenstellung der wichtigsten... Bestimmungen. 12mo, Berlin. 1.40 marks.

Biedermann (Dr. R.). Chemiker-Kalender auf d. Jahr 1880. In 2 parts. 4 marks.

Bénard (Dr. Paul). De l'Action hémostatique des Injections souscutanées d'ergotine. 8vo, Paris. 3.50 fr.

Christlieb (Theod.). The Indo-British Opium Trade and its Effects: A Recess Study. Authorized Translation fr. the German, by David B. Croom. 12mo, London, pp. 102. 2*s*. [The most complete work on the subject.]

Dugan (Dr. P. H.). Recherches critiques et experimentales sur le Nitrite d'Amyle. 8vo, Paris. 4 fr.

Ditte (Alfred) Traité elementaire d'Analyse qualitative des Matières minérales. 8vo, Avec Atlas in folio, Paris. 17.50 fr.

Kœhler (Herm.). Ærztliches Recept-Taschenbuch. 8vo, Leipzig, pp. 296. 4 marks.

Giannetto (Prof. S.). Di un nuovo Ozonogeno per uso clinico. [On a new Apparatus for producing Ozone for clinical use.] Florence, Gius. Pellas.

Lami (E. O.) et **Tharel** (A.). Dictionnaire encyclopédique et biographique de l'Industrie et des Arts industrielles. To be published in about 250 monthly numbers, forming 6 or 7 volumes. Subscription price for the entire work, 125 fr. Each number (No. 1 is out) 0.50 fr.

Limousin (L.). Contributions à la pharmacie et à la thérapeutique. 8vo, Paris. 6 fr.

Murray (R. Milne). Chemical Notes and Equations for Students. 12mo, Edinburgh, pp. 108. 2*s*.

Prior (R. C. A.). On the Popular Names of British Plants: being an Explanation of the Origin and Meaning of the Names of our [English] indigenous, etc., Species. 3d ed., 8vo, pp. 322, London. 7*s*. 6*d*.

Pharmaceutischer Kalender für das Deutsche Reich. Für 1880. 2 parts, 12mo, Berlin. 3 marks.

Squire (Peter). The Pharmacopœias of Twenty-five of the London Hospitals. 4th ed., 12mo, London, pp. 328. 6*s*.

Spons' Encyclopœdia of the Industrial Arts, Manufactures and Commercial Products. Ed. by G. G. André. Part 1. 8vo, Lond., pp. 384. 13*s*. 6*d*.

The Massachusetts College of Pharmacy has appointed Professors E. F. H. Markoe, S. A. D. Sheppard, and Thomas Doliber as Delegates to the Convention for the Revision of the Pharmacopœia.

Condemned Drugs Brought Back.—By order of the Special Drug Examiner of Boston, nearly 4,000 pounds of of worthless rhubarb were condemned in the early part of October. It was of no use whatever as a medicine, and was ordered to be disposed of, according to the United States drug law, by burning or exportation. It could not be burned, so it was sent below the outer light and thrown overboard. Some barrels floated ashore, six of which were sent to Boston for sale. Fortunately, it fell into honest hands and will not be used.—*Boston Advertiser*.

Pharmaceutical Association of South Carolina.—The annual meeting of this association was held in Charleston, on the 19th of Nov., and the following officers were elected: *President*, C. F. Panknin, Charleston; *1st Vice-President*, Dr. H. Baer, Charleston; *2d Vice-President*, C. J. Dunlap, Camden; *Sec.* and *Treas.*, Dr. E. H. Kellers, Charleston; *Board of Examiners*, A. W. Eckel, Chairman, G. J. Luhn, N. H. Schwacke, and C. O. Michaelis.

Stamp Tax.—A committee of the Boston Druggists Association have lately issued the following circular: "It is our purpose to offer at the next session of Congress a bill repealing the stamp tax on medicines and perfumery. As it is a tax on every retail druggist that amounts to from $25.00 to $100.00 each year, we hope you will use your influence with your Representative in Congress, to induce him to favor its repeal. Please see them personally, or write them."

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*]

When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.

No. 656.—**Elixir Cinchonæ et Ferri** (G. McD.).

This correspondent asks why ammonio-citrate of iron is chosen in the formula for Elixir Cinchonæ et Ferri, given on page 349 of our preceding volume, which we repeat here:

Elixir of cinchona.....125 parts.
Citrate of iron and ammonium..... 2 "

In answer, we can only say that pyrophosphate of iron will answer equally well; but the author of the formula had to choose *one* of these salts, and in accordance with his practice, he proposed that which he is in the habit of using. Should there be any reason why the preference should be given to the pyrophosphate—aside from the fact that the latter salt imparts but little additional color to the elixir—we would like to hear of it.

No. 657.—**Damp Walls** (Elizabeth).

We are asked to suggest a remedy for damp walls in the basement office of a correspondent. He says he has tried various plans to keep out the moisture, but has been unsuccessful. Besides, not being the owner of the house, and the latter probably not willing to go to the necessary expense, he cannot apply the remedy on the outside.—Our advice is to cause the walls to be scraped perfectly clean, then to heat the rooms thoroughly, in order to dry the walls temporarily. The latter are then to be coated with common shellac-varnish, in several layers if possible, and afterwards painted. A solution of asphalt in benzine would probably answer equally well. This plan has been furnished to us by a practical builder of large experience, but as there may be difficulties in the way of first drying the walls, he recommends to try the plan on a smaller surface first, in order to prevent useless expense.

No. 658.—**Liquor Opii Dialysatus** (E. M.).

This is a proprietary preparation made by Messrs. Corbyn, Stacey & Co., 300 High Holborn, London, which is thus described in the circular issued by the firm:

"LIQUOR OPII DIALYSATUS is a preparation of opium, obtained, as its name implies, by dialysis. It is a pale liquid, with a slight taste, from which the disagreeable, heavy characteristic odor of opium is conspicuously absent. It contains all the crystalline active principles of opium in the same relative proportions as the crude drug. It is quite free from extractive, resinous, waxy, and caoutchouc substances, and retains only a minimum quantity of coloring matter. The proportion of morphia, and indeed of the opium alkaloids generally is constant, that of the former being equal to four grains of morphia hydrochlorate in the fluid ounce. The dose is, therefore, the same as that of tincture of opium, liquid extract of opium, etc. In continued use, it has been found that this preparation does not produce constipation, headache, or stomach disturbances, and patients exhibit a tolerance not shown to any other preparation of opium."

The same firm also prepares an "Injectio Opii Dialysata," which is *ten* times the strength of the preceding Liquor Opii Dialysatus, and is of the same strength as the Injectio Morphiæ Hypodermica of the Br. Pharm., which contains one grain of acetate of morphia in every ten minims.

No. 659.—**Lily White** (F. C. W.).

There are several preparations in the market which bear this name. They were analyzed some years ago by Prof. C. F. Chandler, of New York, who found them to consist of precipitated carbonate of calcium (chalk) mixed with talc or with carbonate of magnesium. Of course, if only these substances are present, the preparations are perfectly harmless in themselves, excepting only that *any* face-powder will clog up the pores of the skin. All those which contain carbonate of lead are, of course, highly injurious, and should be avoided. Carbonate of zinc, however, may be used instead, which is comparatively harmless. The subnitrate and subcarbonate of bismuth have also been used, but their continued use is frequently followed by untoward symptoms, sometimes quite alarming; besides, after being for some time applied to the skin, the bismuth salts lose their white color, and become more or less yellow, owing to the production of minute quantities of sulphide of bismuth.

No. 660.—**Carmine** (J. L. & Co.).

This coloring matter is prepared by extracting cochineal with boiling water, and adding alum to the clear (filtered or decanted) liquid; or by boiling cochineal with a solution of soda, and adding to the clear (filtered or decanted liquid) egg-albumen with or without an acid. There are but four or five working formulæ published, which, if you desire, we will furnish you, but it is very doubtful whether the finest carmine is made by any of these processes. The manipulation and other conditions have as much to do with the beauty of the product as the quality of the cochineal. Commercial carmine is, of course, not the pure coloring matter of cochineal; it is what is called a *lake*, that is, a compound of coloring matter with a precipitated inorganic oxide or salt. If carmine is treated with ammonia, the pure coloring matter will dissolve, and the inorganic substance will be left behind. We cannot say whether you would succeed in making good carmine. It is *made* easily enough, but unless of good color, hardly salable. If of very bright, brilliant color, its value would bring a handsome profit. That there are certain nice points to be observed is shown by the following story, the truth of which is vouched for by Hirzel. A London manufacturer of carmine paid a visit to a celebrated carmine maker of Lyons, in order to learn his method of manufacture, for which he agreed to pay £1000 sterling. He was shown every step of the process, and to his surprise found that the method was precisely like his own, yet the product was much superior. He returned to London, after previously charging the manufacturer with swindling, claiming that he had kept some portion of the process secret. The latter again invited him to Lyons, in order to convince him of his error. He consented to go, and after having met his colleague of Lyons, the latter asked him how the weather was. "Very fine weather to-day," answered the Englishman. "Well," replied the Frenchman, "in that case we can make carmine to-day, for if I were to undertake the work on a cloudy day, my carmine would be as dull as yours." London, therefore, does not appear to be the best place in the world for making carmine.

The finest and best carmine which is to be had now is sold by Monin, successeur de Titard, rue Grenier-Saint-Lazare, Paris.

No. 661.—**Southern Botanical Specimens** (W. S., Washington).

Mr. A. H. Curtis is the collector and publisher of the Botanical Specimens of Southern Plants which you inquire about. His present address is Jacksonville, Florida. We are informed by Mr. Sereno Watson, the curator of the Herbarium at Cambridge, Mass., that there is only a single set remaining of the 1st and 2d fascicle, which may

be had from him at $20 per fascicle. A third fascicle will be ready during the winter, and the series will probably be continued until it includes most of our Southern flora. A copy of the first two fascicles is also advertised for sale by T. O. Weigel, book-dealer at Leipzig, for 110 marks.

No. 662.—**Patent and Proprietary Medicines, etc.** ("Constant Reader;" B. B. B.; W. N. D. L.; A. L. C.; G. P. H.; J. Q. A.; "Ana;" "Old Remedy;" W. S., Jr., etc.).

We have a number of inquiries from correspondents regarding the composition of various proprietary medicines. For the present we are unable to answer, as we do not know their composition, and as they have never been analyzed, so far as we know. Should we obtain the information hereafter, we will publish the formula.

No. 663.—**Essence of Heliotrope** (W.)

The flowers of *Heliotropium peruvianum* L., and *H. grandiflorum* L. contain an essential oil which may be extracted by the process of enfleurage. The freshly-collected flowers are macerated for 24 hours with a pure, odorless fat at a moderate heat (60–80° C.), and, after straining, the fat is allowed to cool; this forms the pommade d'heliotrope. This is macerated for a fortnight with deodorized alcohol, and the filtered solution constitutes the essence of heliotrope. An artificial essence is made by preparing an alcoholic tincture of that variety of vanilla which is known in commerce as Vanillon (from *Vanilla Pompona* Schiede, or *V. grandiflora* Lindl.; compare NEW REM., 1879, p. 292), and adding a very small quantity of oil of bitter almonds.

No. 664.—**Archil, Litmus and Cudbear** (A. Z.)

Archil or Orseille is a coloring matter prepared from various lichens, chiefly species of *Rocella* and *Lecanora*, with the aid of ammoniacal solutions, for which purpose putrid urine is very commonly employed as a cheap source. It is sold in form of a pasty mass of a peculiar ammoniacal odor, alkaline taste, and more or less intense violet-red, or violet color. In French commerce two kinds are distinguished, *orseille de mer*, sea-archil, and *orseille de terre*, land-archil; the former is chiefly obtained from species of *Rocella*, the latter from *Variolaria orcina*, *V. dealbata*, and *Lecanora tartarea*.

By extracting the coloring matter from archil and subsequent evaporation, or by isolating the real chromogen of these lichens, viz., orcin, and afterwards converting it into the proper shade of dye, the extracts of archil are obtained.

The term "French purple" is applied to a lake of archil which is obtained by precipitating an ammoniacal solution of the lichen-acids, after it has become cherry-red by exposure to the air, with calcium chloride. The precipitate has a fine, deep garnet-color.

Cudbear, or Persio, or Red Indigo is nothing else but archil dried with a gentle heat, and powdered.

Litmus is prepared from species of Rocella, Lecanora, and Variolaria by allowing the lichens to putrefy in decomposing urine, or other ammoniacal liquid, to which potash or chalk is added, until the mass has assumed a blue color. Afterwards more chalk and gypsum (calcium sulphate) are added, the mass is formed in small, cubical cakes, and dried.

No. 665.—**Nigrosine** (Several Correspondents).

This coloring matter was discovered in 1863 by Julius Wolff. It was first prepared by heating a mixture of 44 parts of aniline (for blue), 20 parts of crystallized stannous chloride, and 11 parts of nitrobenzol, first for four hours to 190° C., and afterwards from nine to twelve hours to 220–240° C., or at least until a sample of the mixture imparted a yellow color to water. Any uncombined or unaltered aniline (accompanied by diphenylamine) was then distilled off by passing steam through the mixture, the remaining mass separated from water, dried, powdered, and sold as nigrosine. Wolff soon found that other metallic salts besides stannous chloride, and even acids, particularly hydrochloric acid, could produce the body; in fact, that a mixture of an aniline salt and of nitrobenzol alone could produce nigrosine. The first step of the reaction appears to consist in the mere withdrawal of hydrogen, with the formation of "violaniline." Chemically pure nigrosine is prepared thus: A mixture of 22 parts of aniline salt, prepared from chemically pure aniline, and 12 parts of syrupy arsenic acid, containing 70% of anhydride, is heated in a porcelain-lined vessel, under stirring, for four to five hours to 190° C. The temperature is then raised to 220°–240° C., until a sample imparts to water a pure yellow color. Solution of soda is now added, until all acids present in the mass are neutralized, and any remaining aniline, etc., distilled off by steam. The residuary base is separated from water, repeatedly washed, dried, powdered, and then boiled with water, containing somewhat more hydrochloric acid than is required to neutralize all the nigrosine, until everything is dissolved. The filtered solutions are mixed with common salt, which throws down the coloring matter. When cold, the latter is collected on a filter, washed, again dissolved in slightly acidulated water, and again precipitated with salt. The precipitate is finally boiled repeatedly with distilled water, the hot solution filtered, and allowed to cool, when the pure coloring matter separates.

Nigrosine prepared from pure aniline is a deep-blue coloring matter; while, if the aniline contains toluidine, it approaches a black in direct proportion to the amount of toluidine present.

Nigrosine, as it occurs in commerce, is therefore the hydrochlorate of the "nigrosine-base," and constitutes a salt which has the composition $C_{36}H_{27}N_3.HCl$.*

Nigrosine Ink for the Hectograph.—MR. H. B. PARSONS writes us from Washington, that he "finds good nigrosine makes a very superior ink for use with the hectograph." It has the advantage of being rather more freely soluble in water than the violet inks, and can be removed from the gelatin much more quickly by washing. Its color is also in its favor.

In connection with this subject we may mention, on the authority of an ordnance officer at West Point, that the gelatin mass varies considerably in different hectographs with respect to the way in which it holds ink. In some instances the ink is absorbed to such a depth that the mass is practically rendered useless.

No. 666.—**Mithié's Elixir** (B. & J. M.).

This is a carminative elixir, which is prepared according to the following formula:

Ginger	ʒ ½	or 15	gm.
Cinnamon	ʒ 2	" 8	"
Long pepper	ʒ 2	" 8	"
Galanga	ʒ 1	" 4	"
Nutmeg	ʒ 1	" 4	"
Cloves	ʒ 1	" 4	"
Cardamom	℈ 1	" 1.2	"
Alcohol	fl. ʒ 6	" 180	"

Digest for 14 days and filter. *Dose:* 1–4 teaspoonfuls in some suitable vehicle.

No. 667.—**Wedel's Pectoral Powder** (Otto N.).

The original formula contained gum benzoin, and not benzoic acid. At present, however, if used at all, the following formula is usually followed:

℞ Acidi benzoici	gr.	8.
Sulphuris loti	gr.	75.
Glycyrrhizæ rad.	ʒ	2½.
Iridis florentin. rad.	ʒ	½.
Sacchari	ʒ	5.
Olei anisi	gtt.	4.
" fœniculi	gtt.	4.

M. Fiat pulvis.—*Dose:* A tablespoonful 3 or 4 times a day, in bronchitis, severe cough, or croup.

Older formulæ differ considerably in the quantities of the ingredients.

* *Dingler's Pol. Journ.*, 323, 416.

PRESCRIPTIONS AND FORMULÆ.

We shall be obliged if our readers, who makeuse of these formulæ, will inform us of their experience with them, and note any errors or modifications worthy of attention.

To Make Leeches Bite.—Dr. Alex. Hadden, of this city, writes us that the secretions of the skin of some persons are obnoxious to leeches, and prevent their biting when they are applied. This may be entirely remedied by first washing the surface with a weak solution of bicarbonate of soda and then drying it thoroughly with a clean towel, after which failure will be rare.

Court Plaster.—Soak isinglass in a little warm water for seventy-four hours; then evaporate nearly all the water by gentle heat; dissolve the residue in a little dilute alcohol, and strain the whole through a piece of open linen. The strained mass should be a stiff jelly when cold. Now stretch a piece of silk or sarsenet on a wooden frame, and fix it tight with tacks or pack-thread. Melt the jelly, and apply it to the silk thinly and evenly with a badger hair-brush. A second coating must be applied when the first has dried. When both are dry, apply over the whole surface two or three coatings of balsam of Peru. Plaster thus made is very pliable, and never breaks.—*Pharm. Journ.*

Cystitis in the Male.—The following is frequently employed at Jefferson Medical College Hospital:

℞ Pulv. opii .....grs. xij.
Camphoræ.....grs. xxx.
Ext. belladonnæ.....grs. iij.
Ol. theobromæ..... q.s.
M. et div. in suppos. no. vi. Sig.: One each night before retiring.

Dr. S. W. Gross' prescription is also often employed. It is as follows:

℞ Copaibæ.....℥ iv.
Acidi benzoici.....ʒiv.
Acaciæ,
Sacchari.....āā ℥ ij.
Olei gaultheriæ.....gtt. xx.
Aq. camph., q.s. ad..... ℥ viij.
M. Sig.: A tablespoonful every four hours.—*Medical Record.*

Hagan's Magnolia Balm is said by Chandler to be a colorless fluid containing 23.7% of zinc oxide. The bottle contains 3½ fl. oz. of liquid, containing 2 drachms of glycerin and 262 grains of zinc carbonate, together with a trace of carmine, and flavored with lavender and bergamot.—*Hahn.*

Duryea's Maizena, according to Hager, is cornstarch in powder. Karl André says that it consists of the fruit of the Carnauba or wax-palm, from which Brazilian palm-wax is obtained. [?]

Macassar Oil.—Sunflower oil, 100 grams; goose grease and "Kamfett," of each 15 grams; liquid storax, oil of eggs, oil of thyme, cacao butter, of each 8 grams; neroli, 4 grams; Peruvian balsam, 0.6 gram; otto of roses, 0.05 gram.—*Henkenius.*

Malt Extract (Johann Hoff, of Berlin).—Hager says that this has changed in composition since first introduced, and that it is subject to variation. It was at first a weak Bavarian beer, mixed with an extract made with beer, from buckbean, blessed thistle, frangula bark, and with some addition of caramel, coriander, cinnamon, anise, potash, etc. The proportion of extractive matter has been increased by the addition of syrup of potato starch and glycerin. Hoff denies the presence of frangula, and all chemists have not found it; but Hager maintains his assertion. The proportion of extractive matter has increased from 4½ to 10 or 12%. The proportion of spirit has always been 3%.

Email Ink.—The drug-house of Louis Müller, in Leipzig, has put on the market colored inks which may be used for writing labels on glass, porcelain, ivory, marble, mother-of-pearl, and metal. The writing is done with a goose-quill, and, when dry, adheres so firmly that it cannot be removed by any liquid. Four different colors are made—black, white, red, and blue.—*Drog. Zeit.*, No. 44.

Cheap Indelible Ink.—Braconnot recommends the following: 20 parts of potassa are dissolved in boiling water, 10 parts of fine-cut leather-chips and 5 parts of flowers of sulphur are added, and the whole heated in an iron kettle until it is evaporated to dryness. Then the heat is continued until the mass becomes soft, care being taken that it does not ignite. The pot is now removed from the fire [allowed to cool], water is added, the solution strained and preserved in bottles. This ink flows easily from the pen.—*Pol. Notizbl.* and *Drog. Zeit.*

Tablets of Chlorate of Potassium.—

Chlorate of potassium in fine powder...96 parts.
Tragacanth in fine powder..... 4 "

Make a paste with water, and form into tablets containing 4 grains. This is Mr. Yvon's formula, in case sugar is desired to be omitted.—*Journ. de Ph. et Chim.*

Netolitzky's Bromine Inhalation.—

Bromine.....0.5 to 1.0 gm. (8–16 grs.).
Bromide of potassium.0.5 to 1.0 gm. (8–16 grs.).
Distilled water.....150 to 200 gm. (5 to 7 fl. ℥).

Dissolve. To be poured, in small quantities at a time, upon a sponge or upon lint, for inhalation in *croup*. The effects of this solution are very favorably spoken of.—*Prag. Med. Wochensch.* and *Ph. Centralh.*

Mosler's Anti-leucæmia Pills.—

℞ Piperini.....	5.0 gm. or gr.	75.
Olei eucalypti.....	10.0 " " "	150.
Quiniæ muriatis.....	2.0 " " "	30.
Ceræ flavæ.....	3.0 " " "	45.

Melt the wax with a gentle heat, then add the oil of eucalyptus, and afterwards the other ingredients, in fine powder. Make into 150 pills.

The original formula omitted the wax. Dr. Hugar recommended the addition of the latter, as the other ingredients will not form a plastic mass.—*Pharm. Centralh.*, No. 43.

A Good Blacking.—Probably the best ordinary blacking which can be produced is made by the following formula, which has been long in use:

Mix intimately 1 pound of molasses, 1 pound of best bone-black in *very* fine powder, and ¼ pound olive oil; then add ¼ pound sulphuric acid, previously diluted with ¾ pounds of water. The whole is allowed to stand for 3 hours or longer, and afterwards as much water is added as is necessary to give it the proper consistence.

Remedy for Corns.—Mr. Gezow, a Russian apothecary, recommends the following as a "sure" remedy for corns, stating that it proves effective within a short time, and without causing any pain:

Salicylic acid..... 30 parts.
Extract of cannabis indica ..... 5 "
Collodion..... 240 "

To be applied by means of a camel's-hair pencil.—*Pharm. Zeit. f. Russl.*, No. 19.

Assay of Commercial Jalap.—Mr. Wm. H. Keeler, in a thesis presented to the New York College of Pharmacy, reported the results of his examination of ten commercial samples of jalap, which he found to contain the following amounts of resin of jalap:

1.	8.0 per cent.	6.	9.5 per cent.
2.	8.5 "	7.	10.0 "
3.	8.6 "	8.	10.6 "
4.	8.7 "	9.	11.4 "
5.	9.0 "	10.	13.8 "

NEW PATENTS.

Some Recently Patented Remedies and Processes.

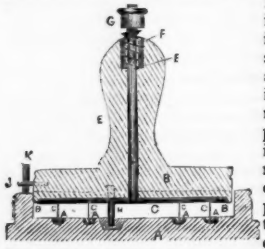
Medicated Licorice (Pat. No. 221,014—Wm. E. Armstrong, New York, N.Y.). The licorice root is coarsely ground and saturated with a mixture of oil of tar, two ounces; glycerin, one ounce; simple syrup, one ounce; alcohol, one pint. The mixture is inclosed in moisture-tight wrappers.

Hog-Cholera Medicine (Pat. No. 221,039—Wm. A. Denton, Council Bluffs, Iowa). Consists of alum, sulphate of zinc, Venetian red, and capsicum.

Ague Medicine (Pat. No. 220,036—Albert Guyer, Louisville, Ky., and Jos. L. Atherton, New Albany, Ind.). Consists of Peruvian bark, rhubarb, and gum camphor.

Desiccated Cocoanut (Pat. No. 220,359—John S. Dunham, St. Louis, Mo., assignor to Dunham Manuf. Co.). Consists first of combining glycerin with rasped cocoanut-meats, and subjecting both to the action of heat and stirring until a complete absorption of the glycerin has taken place; next applying melted paraffin, and continuing the stirring and heating action; finally desiccating the entire contents.

Apparatus for Coating Pills (Pat. No. 220,361, granted on the 7th of October to Henry M. Dury, of Edgefield, Tenn., is shown in section, in the adjoining illustration).—It consists of a plunger, having a depressed face and rim, in which are affixed the needles for holding the pills. A pan into which it fits has studs upon its margin, passing through eyes in the side of the plunger, which insures that the needles will centre over hemispherical depressions in the bottom of the pan, intended to receive the pills and hold them in a position to be impaled upon the needles. A perforated plate is affixed to the plunger, through which the needles pass, and is controlled by a rod and spring in the handle. When the knob on the extremity of the rod is pressed upon, the perforated plate will crowd the pills off from the points of the needles, and thus detach them.



Manufacture of Chloroform and Allied Products (Pat. No. 220,397—John W. Mallet, University of Virginia). The improvement consists in forming from the vapors and gases arising from petroleum springs, or from the light products of distillation of petroleum, chlorine substitution products, by bringing the chlorine into close contact with such hydrocarbons through the intervention of a porous substance, or of metallic chlorides, and by separating such products from each other by fractional distillation.

Cement for Closing Joints of Stoves and Fireplaces (Pat. No. 220,715—Jacob Hinklein, New York, N. Y.). Consists of common earth or clay, and burned clay in combination with iron filings, salt, cow hair, and animal blood.

Preparation of Pepsin (Pat. No. 220,745—Wm. Hall, Brooklyn, N. Y.). A compound of pepsin and salt.

Speculum and Electric Light (Pat. No. 220,762—Samuel Hoffman, Matanzas, Kans.). Consists of a bivalve speculum to which an apparatus for producing an electric light is attached, together with a reflector like those used for lighting the interior of the eye, throat, ear, etc., for the purpose of directing the light into the speculum and protecting the eye from its glare.

Remedy for Catarrh (Pat. No. 220,794—Henri E. Bissell, Hartford, Ct.). Consists of a mixture of tribasic phosphate of soda, bicarbonate of soda, and sugar of milk.

Process of Producing Malt Extract (Pat. No. 220,825—Gustavus A. Gessner, Fremont, Ohio). Avoiding the danger of fermentation during the operation by causing a heated extractive liquid to percolate through the grain, while keeping the grain heated to a temperature of from 156° to 160° Fahr.

SOCIETY REPORT.

College of Pharmacy of the City of New York.—The second conversational meeting of the present season was held Thursday, November 20th, at 8:30 P.M., in the lower Lecture Hall. A great many members and their friends were present.

Vice-President Close opened the meeting with a few appropriate remarks.

Mr. Ramsperger brought forward the subject of the officinal syrups made with fluid extracts, and asked whether the formulæ for the syrups themselves or for the fluid extracts could not so be improved as to yield bright and stable syrups. A lively discussion followed, of which the following are the main results:

Syrupus Senegæ.—Several members stated that, made directly from the root, the syrup was clear and kept well, and was as active as the officinal. The addition of an alkali to the fluid extract—bicarbonate of potassium as recommended by Procter, or ammonia, Squibb—for keeping it from gelatinizing was discussed and not found objectionable.

Syrupus Ipecacuanhæ.—Mr. Peixotto found that the plan to mix the fluid extract with water, letting stand, filtering and dissolving in it the sugar, worked exceedingly well. Mr. Neynaber preferred to make the fluid extract with a menstruum containing less alcohol than the officinal, then to mix with syrup and add three to four per cent of alcohol to keep it bright. Other members used the officinal process, but added three to four per cent of alcohol to the finished preparation. Mr. Rice preferred Procter's formula: Exhaust the root with alcohol, distil off the alcohol till a soft extract remains, which boil with water till all alcohol is driven off. Filter and add water and alcohol to make the finished fluid extract contain fifty per cent of alcohol. This yields a good, bright syrup, and keeps.

Incidentally attention was called to Prof. C. L. Diehl's idea of what a fluid extract ought to be: Only such menstrua ought, if possible, to be used which could be wholly evaporated; this would, of course, exclude the use of glycerin.

Syrupus Scillæ Compositus.—Most of the members stated that it was used less now than formerly. Dr. Menninger makes fluid extract especially for this purpose, adding the tartar emetic only to the finished syrup.

Syrupus Scillæ.—W. Gardner exhibited a beautiful specimen of acetic fluid extract of squills, made by repercolation with strong acetic acid. Vinegar of squills is made by diluting with water.

Syrupus Zingiberis.—The officinal is little more than a flavoring syrup; the old way of mixing tincture or fluid extract with syrup was greatly to be preferred; although unsightly it was active. Mr. Neynaber called attention to the new process for a soluble essence of ginger, which mixes clear with water or syrup. Shake fluid extract repeatedly with small quantities of powdered slaked lime until it ceases to lose color, filter and wash the filter with proof spirit till double the quantity is obtained; then add, drop by drop, diluted sulphuric acid till the filtrate suddenly loses its rich yellow color, let it stand twenty-four hours, filter, dilute with sufficient water, shake with powdered pumice stone, filter and dissolve the sugar in it.

If a deeper color is desired, one or two drops of liquor potassæ may be added.

Syrupus Tolu.—Mr. Rice prefers to heat the tolu for a couple of hours with syrup in a covered vessel, let cool and strain.

A member wanted to know whether there was any objection to adding a small percentage of diluted sulphuric acid to the menstruum for making tincture and fluid extract of cinchona, the greater part of the alkaloids would be taken up, and the preparations would keep clear. This was thought to be a good idea, and no reasonable objection could be found.

Mr. Ramsperger stated that he had had occasion to mix fluid extract of cinchona with water, which of course gave a turbid mixture; by adding a little acid and filtering, it got clear; by now adding a solution of sulphate of quinia, the mixture got turbid again, and deposited a dark-red sediment. This was supposed to be cinchotannic acid. Mr. Ramsperger also wanted to know why a clear concentrated aqueous solution of extract of aloes on diluting grew turbid. Mr. Rice thought that the prolonged heat necessary for evaporation might have altered the nature of some of the constituents, so that one was soluble only in a concentrated solution of another; besides it was a well-known fact that some clear concentrated extractive solutions grew more or less turbid on dilution.

Professor Bedford exhibited beautiful photographs of plants by Mr. C. L. Lochman; these photographs show the root, stem, flowers, leaves, with a *relief* unsurpassed and seldom equalled. The price for one dozen is only put at $1.50. Especially those made by the ferrocyanide of iron process were greatly admired.

This process, in its general features, is as follows:

Paper is floated on a diluted solution of sesquichloride of iron, taken up and dried in the dark. A negative is superposed and the whole exposed to the sun in a copying frame, the negative uppermost. After sufficient time the sensitized paper is floated on a solution of ferricyanide of potassium, which gives a print in blue color on a white ground. The explanation is this: Wherever direct sunlight strikes the ferric chloride, it is either entirely or at least partially reduced to ferrous chloride, according as the light can pass through the plate more or less completely, owing to the lighter or shaded portions of the negative. Where the dark portions of the negative have protected the paper, the ferric chloride remains unaltered. After exposure, the paper is washed with solution of ferricyanide of potassium, which produces with the ferrous chloride on the paper a more or less intense blue (Turnbull's blue), while, with the unaltered ferric chloride, it forms a brownish color, which is soluble in water, and when washed off, leaves the paper white.

Emulsion of Cod-Liver Oil was next discussed. Mr. Lehlbach exhibited a beautiful and, as he claimed, permanent emulsion made with Irish moss, glycerin, and cod-liver oil. The presence of glycerin was objected to by several members, since it did not agree with all persons, and syrup was to be preferred. It was stated that Wilbor's emulsion contained alcohol. Mr. Close mentioned his glyconated emulsion, and stated that it kept long without spoiling, only grew thinner. His addition of sherry wine and phosphoric acid was considered an excellent idea. Emulsions containing glycerin and tragacanth, it was stated, would sometimes separate and clot.

Messrs. Tscheppe and Rice spoke of pepsin and mentioned the statement found in some medical journals, that the American pepsin was greatly inferior to the European, which is entirely contrary to fact. There exist but few reliable diluted pepsins in the European market, which is also admitted by Prof. Liebreich, who declares his own "essence" the best. This essence is made by digesting the stomachs of pigs, etc., in glycerin.

Prof. E. Scheffer has shown that the usually employed test of digesting albumen with pepsin and hydrochloric acid is not decisive; since albumen with hydrochloric acid alone will be dissolved, if digested for a sufficient length of time.

Milk of Magnesia.—Some members stated that it was a magma of hydrated magnesia, made by precipitating a solution of epsom salt with ammonia and washing. The only secret in its manufacture is the mode of washing it.

Horsford's acid phosphates was stated by Mr. Rice to be a solution of bone and mineral phosphates, which contained phosphates of magnesia, lime, soda, and free phosphoric acid, about seven grains in 1 fl. ʒ.

Mr. Ramsperger recommended that the pharmacists make their own phosphoric acid, and stated that Prof. Markoe's process (with iodine, bromine, and nitric acid) if *strictly* followed, was not dangerous at all.

Merck's acidum phosphoricum purissimum, spec. gr. 1700, was noticed favorably, and stated to be the most expeditious way of making diluted phosphoric acid by simply diluting one part with water to eight and one-third part.

Mr. Tscheppe then read a very interesting paper on the comparative value of the different extracts of meat in the market, which was listened to with close attention. We give a condensed extract of the paper read on page 9.

The *Druggist's Circular* presented to the college three very interesting Mexican drugs: the bark of *Amyris Parke-Davisiana* (? !), whole plant of *Euphorbia pulcherrima*, and leaves of *Smilax pseudo-China*, which, however, came too late for this meeting. They will be exhibited at the next conversational meeting to be held January 15th, 1880.

ITEMS.

Manufactured Eggs.—*The British Medical Journal* appears to have lent its aid to the tradesmen of Great Britain, some of whom are by no means pleased at the extent to which American agricultural products and manufactured articles are entering their markets. A recent number of one of our Canadian exchanges copies the following as a "good thing," from the columns of the former.

"COUNTERFEIT EGGS.—It is well known that in America everything is counterfeited; the wooden hams and nutmegs sent from the New England States are well remembered. Eggs are now also counterfeited; and this manufactory is carried out on a large scale. On one side of a large room the reporter saw several large copper vessels filled with a thick glutinous yellow mass, which a man was constantly stirring. This was the yellow of the egg—the yolk. On the opposite side were similar vessels, in which the white was fabricated. The egg-shells were made of a white substance resembling plaster-of-Paris, by means of a blow-pipe, just as soap-bubbles are blown. After being dried in an oven, the egg-shells were filled: first with artificial albumen, then with some of the artificial yolk, and lastly with a little of the artificial albumen. The small opening at the end of the egg was closed with white cement; and the greatest achievement of modern civilization, the artificial egg, was ready. In appearance it resembled a natural egg; but, whether cooked or raw, it was indigestible and injurious to health."

We will add to the above that these eggs have no home consumption, but are vended solely in localities where such cock-and-bull stories are circulated as facts, and where the purchasers do not know the difference between the genuine and spurious article.—ED. N. R.

Palatable Epsom Salt.—M. Yvon states that the disagreeable taste of sulphate of magnesia may be completely concealed by the addition of a few drops of the essence of mint, provided that the quantity of the vehicle be small. He advises that ʒ vi. of the sulphate should be dissolved in about ℥ i. of water, two or three drops of the essence of mint being then added; or the flavoring agent may be added to the salt, and the patient directed to dissolve the whole in as small a quantity of water as possible.

British Laws Regulating the Sale of Medicines and the Practice of Medicine do not appear to have been productive of any very practical results, if we may judge from the numerous accounts of peripatetic quacks, who are doing a thriving business. Our insular cousins are wont to point at the United States as the place where such things attain their most luxurious development, yet we shall be much mistaken if it can be found that there has ever been witnessed here such an exhibition, either of charlatanry or gullibility, as described in recent numbers of the *Lancet*, and *Pharmaceutical Journal*. The following letter addressed to the latter is a case in point.

SIR:—There has lately arrived amongst us at Birkenhead a strange phenomenon for this country—a lady doctor, who professes to be an Italian—Madame Enault. She has a magnificent turn out, a chariot, all mirrors and gold, with three splendid horses, said to be worth a hundred guineas each; seated on the top of this imposing vehicle are six musicians, dressed in fancy costume, cavalier hats, boots and feathers. The lady herself is attired in a picturesque Italian costume, ornamented with dragons, stars, and other hieroglyphics. She also wears a gilded tiara and head-dress of beads, with flowing black hair. Just imagine the sensation she causes as she drives through the town with her band playing in the loudest strains, to the place where she is located, a piece of ground in Conway Street. This lady appears to cure every imaginable disease that human flesh is heir to—paralysis, extracting teeth, takes out encysted tumors, and all before the public almost instantaneously; but whether she does so in reality or not public opinion is divided. She is surrounded daily by a dense mass of two or three thousand people, including all classes of society, magistrates, merchants, shopkeepers and workingmen, all anxious and struggling to procure a bottle of a preparation that she calls "malachité," which she sells at 2*s*. per bottle. This she recommends almost for every complaint, for headache, toothache, neuralgia, etc., and to show what effect faith has in many cases of imaginary disease, I may mention that I have examined it, and believe it to be a mixture containing tincture of cannabis indica, together with glycerin and essential oils.

I send this short sketch thinking it may interest some of your readers and many pharmacists in Lancashire, who must have heard of Madame Enault, and to show the height credulity will reach in the nineteenth century.

54, *Stanhope Street, Liverpool.* J. THOMPSON.

Killed by Nitric Acid Fumes.—Charles Wurm, aged 50, a shipping clerk employed by Lehn & Fink, wholesale druggists, of No. 160 William street, died recently of œdema of the lungs, the result of inhaling the fumes of nitric acid. He was so anxious to get away some goods that he assisted the porter to place them on a truck. In carrying a carboy of nitric acid weighing 150 pounds, he let it fall, and the greater part of its contents was spilled. He endeavored to collect some of it in a bottle, and in doing so inhaled enough of the fumes to cause fatal illness.

The Medical News and Abstract—a combination of the *Medical News and Library* and the *Monthly Abstract of Medical Science*—makes its appearance as a new monthly, under the editorial management of Dr. J. Minnis Hays. Its price is $2.00 per annum, and the first number has 62 pages of matter. Mr. H. C. Lee, of Philadelphia, is the publisher.

Messrs. Otto & Sons, 64 Chatham st., of this city, manufacturers of surgical instruments, desire us to say that Dr. Mark Spicker is no longer connected with them, and is not authorized to take orders or receive money on their account.

Chlorate of Potassium is said to be so largely present as an element in the water of the Dead Sea that a company has already commenced its extraction as a commercial venture. The expense is stated to be 30% cheaper than by any other process known.

The N. Y. College of Pharmacy has a registered attendance of 255 students, viz.: seniors, 87; juniors, 141; third course, 27.

The Druggist and Paint and Oil Trade Review is the title of a new Chicago journal of which H. H. Chandler is Manager, G. P. Engelhardt, Editor, and C. F. Morley, Associate Editor. It is a monthly of 18 pages, and costs $1.00 per year.

John Miers, the patriarch of British botanists, died in London on the 17th of November last. In 1825 he published his "Travels in Chili and La Plata," and, after a residence in Brazil, "Illustrations of South American Plants, and Contributions to Botany," two large works. He was a member of a number of learned societies, and received the commandership of the Order of the Rose from Don Pedro II., of Brazil.

The Pharmaceutical Council of Great Britain has resolved to print 2,000 copies of the index to the *Pharmaceutical Journal and Transactions* for the last ten years, to be given to such persons as should apply for them.

Statistics of Drugs.—*Licorice.*—Eleven thousand cases of 2 cwt. each were produced in 1878 by the Calabrian manufactories.

Manna.—The exports of manna from Palmero, in the years 1875, 1876, and 1877 respectively, were valued at 12,432*l.*, 22,080*l.*, and 26,160*l.*

Insect Powder.—2,730 poods of insect-powder, valued at 7,284*l.*, were exported from the port of Poti, Russia, during the years 1877-78.

Quassia.—Among the exports from Surinam enumerated in a recent consular report, quassia wood occurs to the extent of 48,118 kilograms exported in 1877, and none in 1878. This is the wood of the *Quassia amara*, or Bitter wood of Surinam, described in the Pharmacographia, page 119.

Damar.—14,361 piculs of damar were exported from Java in the year ending June 30th, 1878, against 12,052 in 1876-77. More than 8,000 piculs were sent to Holland, nearly 4,000 to Singapore, and about 1,000 piculs to France.—*Chem. and Drugg.*

PHARMACEUTICAL CALENDAR.—January.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date.	Society Meetings.
1st, Thur.	Louisville Coll. Ph.—Phar. Meet.
	Philad. C. Ph.—Alumni Ass'n.—Social M.
	Massach. C. Ph.—Trust. M.
	N. Y. Coll. Ph.—Trustees' Meet. adjourned to one week later.
6th, Tues.	Philad. C. Ph.—Trustees' Meet.
	Maryl. C. Ph.—Trust. M.
8th, Thur.	N. Y. Coll. Ph.—Trustees' Meet., etc., see Jan. 1.
	N. Y. Germ. Apoth. Soc.—Annual Meet.
	Louisville Coll. Ph.—Directors' Meet.
	Maryl. C. Ph.—General M.
	Newark Pharm. Asso.—Monthly Meet.
12th, Mon.	Rh. Isl. Pharm. Asso.—Annual Meet. at Providence, R. I.
13th, Tues.	St. Louis Coll. Phar.—Pharm. Meet.
	Kings Co. Ph. Soc. (Brooklyn).—Mo. M.
14th, Wed.	Cincinnati Coll. Phar.—Business and Annual Meet.
15th, Thur.	N. Y. Coll. Phar.—Phar. Meet.
	Rock Co. (Wisconsin) Phar. Asso.—Meets at Janesville, Wis.
	Board of Pharmacy of N. J.—Meets at Trenton.
20th, Tues.	St. Louis Coll. Phar.—Trustees' Meet.
	St. Louis Coll. Ph.—Alumni Asso.
	Phil. Coll. Phar.—Phar. Meet.